Mojave Desert
Air Quality Management District

Draft

Staff Report
Proposed Amendments to
Rule 1117 – *Graphic Arts and Paper, Film, Foil and Fabric Coatings*

For adoption on
September 28, 2009

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STAFF REPORT
TABLE OF CONTENTS
Rule 1117 – *Graphic Arts and Paper, Film, Foil and Fabric Coatings*

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I. PURPOSE OF STAFF REPORT

A staff report serves several discrete purposes. Its primary purpose is to provide a summary and background material to the members of the Governing Board. This allows the members of the Governing Board to be fully informed before making any required decision. It also provides the documentation necessary for the Governing Board to make any findings, which are required by law to be made prior to the approval or adoption of a document. In addition, a staff report ensures that the correct procedures and proper documentation for approval or adoption of a document have been performed. Finally, the staff report provides evidence for defense against legal challenges regarding the propriety of the approval or adoption of the document.

II. EXECUTIVE SUMMARY

The Mojave Desert Air Quality Management District (MDAQMD) has the authority pursuant to California Health and Safety Code (H&S Code) §40702 to adopt, amend or repeal rules and regulations. The MDAQMD is proposing to amend Rule 1117 – *Graphic Arts and Paper, Film, Foil and Fabric Coatings* for inclusion in the current rulebook.

H&S Code §39614(d) requires the MDAQMD to adopt the most readily available, feasible and cost-effective local control measures for Particulate Matter (PM) as contained on a list developed by the California Air Resources Board (CARB). CARB has identified on its list of local control measures several items related to graphic arts as potentially feasible. In the "List and Implementation Schedule for District Measures to Reduce PM Pursuant to Health & Safety Code §39614(d)" the District identified one of these measures as requiring further evaluation. The District has evaluated the availability, feasibility and cost-effectiveness of applying this PM control measure related to graphic arts within the MDAQMD. The proposed Reasonably Available Control Measures (RACT) limits were found to have a maximum Volatile Organic Compounds (VOC) cost effectiveness limit of no more than $576 per ton of VOC (2008 dollars). The District finds this to be feasible and cost effective as required by H&S Code §3961(d).

Additionally, the Federal Clean Air Act (FCAA) requires areas designated non-attainment and classified moderate and above to implement RACT for sources subject to Control Technology Guidelines (CTG) documents issued by United States Environmental Protection Agency (USEPA) for "major sources" of VOCs and oxides of nitrogen (NO_X) which are ozone precursors. The District adopted the *8-Hour Reasonably Available Control Technology – State Implementation Plan Analysis (RACT SIP Analysis)* August, 2006 which committed to amending current RACT for graphic arts operations. The MDAQMD has a graphic arts RACT rule which was approved into the SIP in 1996 (61 FR 18962), but this rule does not cover all possible paper surface coating CTG source categories, such as offset lithographic printing. A RACT rule is technically required for all portions of this CTG source category. The District also reviewed three CTGs that were in draft form at the time of adoption of the *RACT SIP Analysis*. The

MDAQMD is now proposing to update Rule 1117 - *Graphic Arts* to reflect current paper, film, foil, and fabric surface coating RACT.

The proposed amendments to Rule 1117 address both the PM Analysis and *RACT SIP Analysis* commitments. The proposed amendments expand the applicability of the rule; updates definitions; updates VOC content limits for different graphic arts product categories; updates VOC emission control system limits; updates solvent cleaning operation limits; and, updates exemptions, recordkeeping and test methods.

III. STAFF RECOMMENDATION

Staff recommends that the Governing Board of the Mojave Desert Air Quality Management District (District) adopt the proposed amendments to Rule 1117 – *Graphic Arts and Paper, Film, Foil and Fabric Coatings* and approve the appropriate CEQA documentation. This action is necessary to address the commitments made by the District in the *List and Implementation Schedule for District Measures to Reduce PM Pursuant to Health & Safety Code §39614(d)* and the *RACT SIP Analysis*.

IV. LEGAL REQUIREMENTS CHECKLIST

The findings and analysis as indicated below are required for the procedurally correct amendments to Rule 1117 – G*raphic Arts and Paper, Film, Foil and Fabric Coatings*. Each item is discussed, if applicable, in Section V. Copies of related documents are included in the appropriate appendices.

FINDINGS REQUIRED FOR RULES & REGULATIONS:

X Necessity

X Authority

X Clarity

X Consistency

X Non-duplication

X Reference

X Public Notice & Comment

X Public Hearing

REQUIREMENTS FOR STATE IMPLEMENTATION PLAN SUBMISSION (SIP):

X Public Notice & Comment

X Availability of Document

X Notice to Specified Entities (State, Air Districts, USEPA, Other States)

X Public Hearing

X Legal Authority to adopt and implement the document.

X Applicable State laws and regulations were followed.

ELEMENTS OF A FEDERAL SUBMISSION:

X Elements as set forth in applicable Federal law or regulations.

CALIFORNIA ENVIRONMENTAL QUALITY ACT REQUIREMENTS (CEQA):

N/A Ministerial Action

X Exemption

N/A Negative Declaration

N/A Environmental Impact Report

X Appropriate findings, if necessary.

X Public Notice & Comment

SUPPLEMENTAL ENVIRONMENTAL ANALYSIS (RULES & REGULATIONS ONLY):

X Environmental impacts of compliance.

N/A Mitigation of impacts.

N/A Alternative methods of compliance.

OTHER:

X Written analysis of existing air pollution control requirements

X Economic Analysis

X Public Review

V. DISCUSSION OF LEGAL REQUIREMENTS

A. REQUIRED ELEMENTS/FINDINGS

This section discusses the State of California statutory requirements that apply to the proposed amendments to Rule 1117. These are actions that need to be performed and/or information that must be provided in order to amend the rule in a procedurally correct manner.

1. State Findings Required for Adoption of Rules & Regulations:

Before adopting, amending, or repealing a rule or regulation, the District Governing Board is required to make findings of necessity, authority, clarity, consistency, non-duplication, and reference based upon relevant information presented at the hearing. The information below is provided to assist the Governing Board in making these findings.

a. Necessity:

The proposed amendments to Rule 1117 are necessary to address the commitments made by the District in the *List and Implementation Schedule for District Measures to Reduce PM Pursuant to Health & Safety Code §39614(d)* and the *RACT SIP Analysis*.

b. Authority:

The District has the authority pursuant to California Health and Safety Code (H&S Code) §40702 to adopt, amend or repeal rules and regulations.

c. Clarity:

The proposed amendments to Rule 1117 are clear in that they are written so that the persons subject to the rule can easily understand the meaning.

d. Consistency:

The proposed amendments to Rule 1117 are in harmony with, and not in conflict with or contradictory to any State law or regulation, Federal law or regulation, or court decisions. USEPA has issued five CTGs which have an impact on Rule 1117: CTG for Flexible Package Printing (EPA 453/R-06-003, 2006/09); CTG for Offset Lithographic Printing and Letterpress Printing (EPA 453/R-06-02, 2006/09); CTG for Paper, Film, and Foil Coatings (EPA 453/R-07-003, 2007/09); CTG for Control of VOCs from Existing Stationary Sources – Volume II; Surface Coating of Cans, Coils, Paper,

Fabrics, Automobiles and Light-Duty Trucks (EPA 450/2-77-008, 1977/05); and, CTG for Control of VOCs from Existing Stationary Sources – Volume III: Graphic Arts-Rotogravure and Flexography (EPA 450/2-78-033, 1978/12). The CTGs establish requirements and emission limits for VOCs but do not directly implement them. Most of these emission limits have been previously included in Rule 1117 and the few which were not originally included are being added by the proposed amendments, therefore the proposed amendments are not in conflict or inconsistent with the CTGs.

There are two Federal New Source Performance Standards (NSPS) that apply to Rule 1117: 40 CFR 60 Subpart QQ (Standards of Performance for the Graphic Arts Industry: Publication Rotogravure Printing; and 40 CFR 60 Subpart RR (Standards of Performance for Pressure Sensitive Tape and Label Surface Coating Operations. The proposed amendments are not in conflict with either NSPS.

There are three Maximum Achievable Performance Standards (MACTs) that apply to graphic arts; Subpart KK (National Emission Standards for the Printing and Publishing Industry); Subpart OOOO (Fabric Printing, Coating and Dyeing); and, Subpart JJJJ (National Emissions Standards for Hazardous Air Pollutants: Paper and other Web Coating). The proposed amendments are not in conflict with the MACT standards.

e. Non-duplication:

The proposed amendments to Rule 1117 do not impose the same requirements as any existing state or federal law or regulation because the District is adopting this rule in response to H&S Code §39614(d) and federal VOC RACT requirements.

f. Reference:

The District has the authority pursuant to H&S Code §40702 to adopt, amend or repeal rules and regulations. The District is required to adopt readily available, feasible and cost-effective control measures for particulate matter from a list of potential local control measures promulgated by CARB pursuant to H&S Code §39614(d).

g. Public Notice & Comment, Public Hearing:

Notice for the public hearing for the proposed amendments to Rule 1117 will be published 08/28/2009. See Appendix "B" for a copy of the public notice. See Appendix "C" for copies of comments, if any, and District responses.

2. Federal Elements (SIP Submittals, Other Federal Submittals).

Submittals to USEPA are required to include various elements depending upon the type of document submitted and the underlying federal law that requires the submittal. The information below indicates which elements are required for the proposed amendments to Rule 1117 and how they were satisfied.

a. Satisfaction of Underlying Federal Requirements:

The FCAA requires areas designated non-attainment and classified moderate and above to implement RACT for sources subject to CTG documents issued by EPA for "major sources" of VOCs and NO_X that are ozone precursors. The District adopted the *RACT SIP Analysis* August, 2006 which committed to amending current RACT for graphic arts operations. The MDAQMD has a graphic arts RACT rule which was approved into the SIP in 1996 (61 FR 18962), but this rule does not cover all possible paper surface coating CTG source categories, such as offset lithographic printing, letterpress printing, and screen printing. A RACT rule is technically required for all portions of this CTG source category. USEPA directed the District to evaluate San Joaquin Valley Air Pollution Control District (SJVAPCD) Rule 4607 – *Graphic Arts and Paper, Film, Foil, and Fabric Operations* (12/18/08), Bay Area Air Quality Management District (BAAQMD) Rule 8-20 – *Graphic Arts Printing and Coating Operations* (11/19/08), and Sacramento Metropolitan Air Quality Management District (SMAQMD) Rule 450 *Graphic Arts Operations* (10/23/08) as RACT rules. SJVAPCD Rule 4607 was used as a basis for the amendments to Rule 1117 – *Graphic Arts and Paper, Film, Foil, and Fabric Operations.*

b. Public Notice and Comment:

Notice for the public hearing for the proposed amendments to Rule 1117 will be published 08/28/2009. See Appendix "B" for a copy of the public notice. See Appendix "C" for copies of comments, if any, and District responses.

c. Availability of Document:

Copies of the proposed amendments to Rule 1117 and the accompanying draft staff report will be made available to the public on 08/18/09. The proposed amendments will also be reviewed by the Technical Advisory Committee (TAC), a committee consisting of a variety of regulated industry and local governmental entities, in September, 2009.

d. Notice to Specified Entities:

Copies of the preliminary draft Rule 1117 were sent for initial industry review on 05/26/2009. Copies of the proposed amendments to Rule 1117 and the accompanying draft staff report will be sent to all affected agencies. The proposed amendments will be sent to CARB and USEPA on 08/18/09.

e. Public Hearing:

A public hearing to consider the proposed amendments to Rule 1117 has been set for 09/28/2009.

f. Legal Authority to Adopt and Implement:

The District has the authority pursuant to H&S Code §40702 to adopt, amend, or repeal rules and regulations, and to do such acts as may be necessary or proper to execute the duties imposed upon the District.

g. Applicable State Laws and Regulations Were Followed:

Public notice and hearing procedures pursuant to H&S Code §§40725-40728 have been followed. See Section (V)(A)(1) above for compliance with state findings required pursuant to H&S Code §40727. See Section (V)(B) below for compliance with the required analysis of existing requirements pursuant to H&S Code §40727.2. See Section (V)(C) for compliance with economic analysis requirements pursuant to H&S Code §40920.6. See Section (V)(D) below for compliance with provisions of the California Environmental Quality Act (CEQA).

B. WRITTEN ANALYSIS OF EXISTING REQUIREMENTS

H&S Code §40727.2 requires air districts to prepare a written analysis of all existing federal air pollution control requirements that apply to the same equipment or source type as the rule proposed for modification by the district.

The USEPA has issued several recent CTGs which have an impact on Rule 1117. These CTGs were issued after the adoption of the *RACT SIP Analysis*. The CTG for Flexible Package Printing (EPA 453/R-06-003, September 2006) provides recommendations for reducing VOC emissions from inks, coatings, adhesives and cleaning materials used in flexible packaging printing. The CTG for Offset Lithographic Printing and Letterpress Printing (EPA 453/R-06-02, September 2006) provides control recommendations for reducing VOC emissions stemming from the use of fountain solutions, cleaning materials and inks in offset lithographic printing and cleaning materials and inks in letterpress printing. The CTG for Paper, Film, and Foil Coatings (EPA 453/R-07-003, September 2007) provides control recommendations for reducing VOC emissions stemming from

the use of coatings in paper, film and foil surface coating operations. Coating performed on, or in-line with, any offset lithographic, screen, letterpress, flexographic, rotogravure, or digital printing press is part of a printing process and is not part of the paper, film, and foil coating category.

Four CTGs were addressed in the *RACT SIP Analysis.* The Control of VOCs from Existing Stationary Sources – Volume I; Control Methods for Surface-Coating Operations (EPA 450/2-76-028, November 1976), although often listed with the CTGs for historical reasons, this document does not define RACT for any source. It is a compilation of control techniques (pursuant to USEPA comment). The Control of VOCs from Existing Stationary Sources – Volume II; Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles and Light-Duty Trucks (EPA 450/2-77-008, May 1977) provides levels of VOC for all coatings put on paper, pressure sensitive tapes regardless of substrate (including paper, fabric or plastic film) and related web coating processes on plastic film such as typewriter ribbons, photographic film, and magnetic tape. The Control of VOCs from Existing Stationary Sources – Volume III: Graphic Arts-Rotogravure and Flexography (EPA 450/2-78-033, 1978/12) deals with VOC emission from the graphic arts operations which utilize inks containing VOCs (does not apply to offset lithography or letterpress printing). The Control of VOC Emissions from Ink and Paint Manufacturing Processes (EPA-450/3-92-013, April 1992) deals with emission control techniques and cleaning practices throughout the manufacturing process of inks. The CTGs establish requirements and emission limits for VOCs but do not directly implement them. Therefore, rule adoption at the local level and submission as a SIP revision is necessary to implement these requirements. In addition, most of these emission limits have been previously included in Rule 1117 and the remainder are proposed for inclusion by the amendments, therefore the proposed amendments are not in conflict or inconsistent with the CTGs.

There are two Federal New Source Performance Standards (NSPS) that apply to Rule 1117: 40 CFR 60 Subpart QQ (Standards of Performance for the Graphic Arts Industry: Publication Rotogravure Printing; and 40 CFR 60 Subpart RR (Standards of Performance for Pressure Sensitive Tape and Label Surface Coating Operations). The proposed amendments are not in conflict with either NSPS. NSPS standards are generally adopted by reference within the MDAQMD (see Rule 900) and apply only to newer stationary sources as specified in the NSPS. The proposed amendments apply RACT level control to all existing stationary sources which in most cases is the same level as that imposed by the NSPS standard. Please note that a new major stationary source in this source category would require Best Available Control Technology (BACT) pursuant to the provisions of New Source Review (Regulation XIII) and thus would be subject potentially more stringent requirements than those contained in either of the NSPSs or the proposed amended Rule 1117.

There are three Maximum Achievable Performance Standards (MACTs) that apply to graphic arts; Subpart KK (National Emission Standards for the Printing and Publishing Industry); Subpart OOOO (Fabric Printing, Coating and Dyeing); and, Subpart JJJJ (National Emissions Standards for Hazardous Air Pollutants: Paper and other Web Coating). The proposed amendments are not in conflict with the MACT standards.

MACT standards are imposed upon existing sources pursuant to the provisions of Rule 1520 – *Control of Toxic Air Contaminants from Existing Sources*. Thus, many of the existing sources are already subject to the same level of control for certain chemicals as that specified in proposed amended 1117. Please note that any new or modified stationary source in this category would require a Toxic New Source Review analysis as part of its permitting process (see Rule 1320) and would thus acquire the same level of control as that provided for by proposed amended 1117.

C. ECONOMIC ANALYSIS

1. General

Rule 1117 is equivalent to San Joaquin Valley Unified Air Pollution Control District Rule 4607 – *Graphic Arts and Paper, Film, Foil and Fabric Coatings* that was determined by USEPA to be RACT (67 FR 4299), therefore cost effectiveness is not required. However, these amendments have been analyzed for VOC cost effectiveness in response to state requirements (see below).

2. Cost Effectiveness

Bay Area Air Quality Management District (BAAQMD) established a cost effectiveness of $576 per ton VOC reduced[1]. In their staff report, SJVUAPCD determined that their cost assumptions paralleled those of BAAQMD. The District finds that the BAAQMD analysis is applicable to this amendment action and presents this value as the cost effectiveness of the proposed rule. This value is deemed feasible for VOC by the District.

D. ENVIRONMENTAL ANALYSIS (CEQA)

Through the process described below the appropriate CEQA process for the proposed amendments to Rule 1117 was determined.

1. The proposed amendments to Rule 1117 meet the CEQA definition of "project". They are not "ministerial" actions.

2. The proposed amendment of Rule 1117 is exempt from CEQA review because it will not create any adverse impacts on the environment. The proposed requirements in the proposed amendments to Rule 1117 are more stringent than the currently existing requirements (see more detailed discussion in Rule Summary §(D)) in that: rule applicability is expanded to include current CTG source categories; definitions are updated to make the rule more comprehensive, reflect the current applicability of the rule, and provide additional clarity; VOC limits for various categories of coatings and solvent coating operations have been included; work practice requirements have been added; and, the monitoring and recordkeeping, and test method sections have been strengthened. In addition, ink

[1] BAAQMD Staff Report "Proposed Amendments to BAAQMD Regulation 8, Rule 20: Graphic Arts Printing and Coating Operations (October 2008) pg 15.

and coatings satisfying the limits contained in the proposed rule are readily available in commerce and have been shown not to cause either additional usage of the coatings themselves or of cleaning solvents. Other air districts have adopted similar rules and neither they nor USEPA has identified increased usage of inks, coatings or solvents as an issue in supporting documentation.

Therefore, no adverse environmental effects are foreseen from the proposed amendments. Copies of the documents relating to CEQA can be found in Appendix "D".

E. SUPPLEMENTAL ENVIRONMENTAL ANALYSIS

1. Potential Environmental Impacts

There are no potential adverse environmental impacts of compliance with the adoption of Rule 1117. Rule 1117 will expand the applicability of the rule to include all CTG categories for paper, film, foil and fabric; will impose additional controls on VOC emissions from inks, coatings, adhesives, fountain solutions, and solvent cleaning; and will increase the overall capture and control efficiency of emission control systems. Inks and coatings complying with the proposed rule limits are readily available in commerce and should not cause additional usage of the coatings themselves or of cleaning solvents. No existing facility in this source category within the MDAQMD currently has an emission control system and the MDAQMD does not expect the installation of such directly as the result of the proposed amendments to the rule primarily due to the high availability of compliant inks and coatings. In fact, the MDAQAMD suspects that a high percentage of the facilities in this source category are already using compliant inks and coatings due to the availability and the fact that most such inks and coatings are purchased within the South Coast Air Quality Management District.

2. Mitigation of Impacts

N/A

3. Alternative Methods of Compliance

N/A

F. PUBLIC REVIEW

See Staff Report Section (V)(A)(1)(g) and (2)(b), as well as Appendix "B"

VI. TECHNICAL DISCUSSION

A. SOURCE DESCRIPTION

Rule 1117 will be amended to include all CTG categories for paper, film, foil and fabric coating operations. The rule will be applicable to all graphic arts printing operations;

paper, film, foil and fabric printing operations; as well as, the use, storage and disposal of solvents associated with these operations.

Graphic arts printing operations include lithographic printing, letterpress printing, digital printing, screen printing, and flexible packaging printing (rotogravure and flexographic).

Lithography refers to a plane-o-graphic method of printing in which the image areas attract ink and the non-image areas repel ink. Most lithography is offset which means the image is transferred from the plate to a rubber blanket, and then printed (offset) from the blanket onto the paper.

Letterpress Printing is a method where the image area is raised relative to the non-image area of the printing plate. The plate is inked and pressed onto the substrate allowing the ink to be transferred to the substrate directly from the image surface.

Digital printing encompasses a variety of technologies all of which are based on the same distinguishing characteristics. Digital printing technologies do not require a physical master, stencils, screens or plates, but instead utilize digital data to control the deposition of ink, toner, or dye to create images. Digital printing is a print on demand technology, which includes, but is not limited to, various forms of inkjet, thermography, electrophotography, ionography, and magnetography.

Screen Printing is a method in which a printing medium, such as ink, is forced through a web or fabric that has a stenciled image area that allows the ink to pass through the mesh to create the image. The stencil openings determine the form and dimension of the imprint.

Flexible packaging refers to any package or part of a package the shape of which can be readily changed. Flexible packaging includes, but is not limited to, bags, pouches, liners, and wraps utilizing paper, plastic, film, aluminum foil, metalized or coated paper or film, or any combination of these materials[2].

Gravure Printing, also known as rotogravure, is an intaglio printing operation in which the ink is transferred from minute etched wells on a cylinder to the substrate, which is supported by an impression roller with excess ink removed from the cylinder by a doctor blade.

Flexographic Printing is the application of an image to a substrate by means of a roll printing technique in which the pattern is applied to an image carrier made of rubber or other elastomeric materials. The image to be printed is raised above the carrier surface.

Offset lithographic printing and letterpress printing are two distinct product categories under section 183(e) of the CAA, but have many similarities in the types of inks and cleaning materials used, and controls available to control emissions. The offset lithographic process is used in many printing applications, including books, magazines, periodicals, labels and wrappers, catalogs and directories, financial and legal documents,

[2] Control Techniques Guidelines for Flexible Packaging Printing, EPA 453/R-06-003, September 2006, pg.5.

business forms, advertising brochures, newspapers and inserts, charts and maps, calendars, tickets and coupons, greeting cards, and stamps. The paper, film and foil coatings product category listed under section 183(e) of the CAA includes coatings that are applied to paper, film, or foil surfaces in the manufacturing of several major product types for the following industry sectors: pressure sensitive tape and labels (including fabric coated for use in pressure sensitive tapes and labels); photographic film; industrial and decorative laminates; abrasive products (including fabric coated for use in abrasive products); and flexible packaging (including coating of non-woven polymer substrates for use in flexible packaging). This category also includes coatings applied during miscellaneous coatings operations for several products including: corrugated and solid fiber boxes; die-cut paper paperboard, and cardboard; converted paper and paperboard not elsewhere classified; folding paperboard boxes, including sanitary boxes; manifold business forms and related products; plastic aseptic packaging; and carbon paper and inked ribbons[3].

MDAQMD Rule 1117 currently applies to any packaging rotogravure; publication rotogravure, or flexographic printing operation; and, to the manufactures of any ink, coating, or adhesive containing VOC which is sold, offered for sale, or supplied for use in graphic arts operations in the MDAQMD. The applicability of Rule 1117 is proposed for amendment to include all CTG categories for paper, film, foil and fabric coating operations as well as the manufacture of any ink, coating, or adhesive containing VOC which is sold, offered for sale, or supplied for use in Graphic Arts and Paper, Film, Foil and Fabric Coating Operations in the District.

Several facilities in the MDAQMD have operations potentially affected by the change in applicability of the rule. The Daily Press operates an offset lithographic printing press that was previously exempted from the requirements of Rule 1117. There are many screen printing operations that are potentially subject to the amended rule which were also previously exempted. There is a potential future facility which may manufacture and print packaging materials for a future beverage bottling plant which may also be subject to the rule.

B. EMISSIONS

The proposed amendments to Rule 1117 – *Graphic Arts and Paper, Film, Foil and Fabric Coatings* do not cause the release of additional air contaminants, or create any adverse environmental impacts because the amended rule proposes a more stringent applicability, as well as, more stringent VOC limits for all categories, including solvent cleaning operations, than the existing rule.

C. CONTROL REQUIREMENTS

Please see section (C)(1) through (C)(12) of the rule (see Appendix "A") for control requirements. Control requirements are in the form of VOC limits for the various inks, coatings, adhesives, fountain solutions, and solvents for various graphic arts operations

[3] Control Techniques Guidelines for Paper, Film and Foil Coatings, EPA 453/R-07-003, September 2007, pg. 5.

and paper, film, foil and fabric operations. Approved VOC emission control system limits, approved coating application equipment, and work practices are also specified.

D. PROPOSED RULE SUMMARY

This section gives a brief overview of the proposed amendments to Rule 1117. The iterated rule version is contained in Appendix "A" of this staff report.

Proposed amendments to Rule 1117 were designed to enable the District to comply with the provisions of H&S Code §39614(d) that requires the adoption of the most readily available, feasible and cost-effective control measures for PM as set forth on a list developed by CARB.[4] This list was developed based on rules, regulations, and programs existing in California as of 01/01/04. There is one South Coast Air Quality Management District (SCAQMD) Rule listed as potential local control measures contained in the CARB document. Specifically, Appendix B of the CARB document *Proposed List of Measures to Reduce Particulate Matter*, Strategy I – *Coating Measures* (Measures reduce VOC) 70, refers to this SCAQMD rule amendment of 10/08/99: Rule 1130 – *Graphic Arts*. The District has analyzed this SCAQMD Rule to determine if the measures they contained were readily available, feasible and cost-effective for implementation within the MDAQMD. The VOC limits contained in the SCAQMD rule were determined to be cost effective and have been incorporated in the proposed amendments to Rule 1117.

Section (A) has been amended to include all CTG categories for paper, film, foil and fabric coating operations, and digital printing operations.

Section (B) definitions are updated. Definitions have been included to make the rule more comprehensive, reflect the current applicability of the rule, and provide additional clarity.

Section (C) requirements have been modified to include specific VOC limits: inks, coatings and adhesives (Table 1); fountain solutions (Table 2); flexographic specialty ink (Table 3); screen printing inks, coatings, and adhesives (Table 4); paper, film, foil, fabric coating and wash primer (Table 5); emission control system overall capture and control efficiency (Table 6); and, solvent cleaning (Table 7). Coating application equipment is specified in section (C)(7), and work practices are specified in (C)(12).

Section (D) has been updated to be more comprehensive and to reflect the proposed applicability of the rule. The section has also been reorganized for clarity.

Section (E) has been updated to reflect the proposed applicability. Recordkeeping requirements have been strengthened and clarified. Digital printing recordkeeping requirements have been added, but this category is otherwise exempted from the requirements of the proposed amendments.

[4] A copy of the CARB "Proposed List of Measures to Reduce Particulate Matter – PM10 and PM2.5 (Implementation of Senate Bill 656, Sher 2003) and attendant staff report may be found at: http://www.arb.ca.gov/pm/pmmeasures/pmmeasures.htm .

Section (F) has been updated to reflect the proposed applicability.

Various format changes were made for consistency with current MDAQMD rule format, as well as correction of typographical errors.

E. SIP HISTORY

1. SIP History

a. SIP in the San Bernardino County Portion of MDAQMD

On July 1, 1993 the MDAQMD was formed pursuant to statute. Pursuant to statute it also retained all the rules and regulations of the SBCAPCD until such time as the Governing Board of the MDAQMD wished to adopt, amend or rescind such rules. The MDAQMD Governing Board, at its very first meeting, reaffirmed all the rules and regulations of the SBCAPCD. Rule 1117 was a new rule adopted by the MDAQMD on 06/22/1994 in response to a SIP-Call made by USEPA. This version of the rule was submitted for inclusion in the SIP on 07/13/1994 and was approved into the SIP on 04/30/96 (61 FR 18962). This version of the rule is the current version in the SIP.

b. SIP in the Riverside County (Blythe/Palo Verde Valley) Portion of the MDAQMD

One of the provisions of the legislations which created the MDAQMD allowed areas contiguous to the MDAQMD boundaries and within the same air basin to leave their current air district and become a part of the MDAQMD. On July 1, 1994 the area commonly known as the Palo Verde Valley in Riverside County, including the City of Blythe, left SCAQMD and joined the MDAQMD. Since USEPA adopts SIP revisions in California as effective within the jurisdictional boundaries of local air districts, when the local boundaries change the SIP as approved by USEPA for that area up to the date of the change remains as the SIP in that particular area. Upon annexation of the Blythe/Palo Verde Valley the MDAQMD acquired the SIP prior to July 1, 1994 that was effective in the Blythe/Palo Verde Valley. Therefore, the SIP history for the Blythe/Palo Verde Valley Portion of the MDAQMD is based upon the rules adopted and approved for that portion of Riverside County by SCAQMD. SCAQMD adopted Rule 1130 – *Graphic Arts* on 10/03/1980 and subsequently amended the rule on 02/01/1985, 05/05/1989, 02/02/1990, 03/02/1990, 04/06/1990, 06/01/1990, 11/02/1990, 12/07/1990, 08/02/1991, 03/06/1992, 07/09/1993, and on subsequent dates to the annexation of the Blythe/Palo Verde Valley. The 03/06/1992 is the version of Rule

1130 that was given limited approved and limited disapproval in the SIP on 04/14/1994 (59 FR 17697). This version of Rule 1130 should have been effective in the SIP for the Blythe/Palo Verde Valley portion of SCAQMD upon annexation into the MDAQMD. It is presumed that the current version of Rule 1117 in the MDAQMD Rule Book is not applicable to the Blythe/Palo Verde Valley area of Riverside County as this rule was adopted on 06/22/1994, just prior to the annexation of this area.

SCAQMD adopted Rule 1130.1 – *Screen Printing Operations* on 08/02/1991 and subsequently amended the rule on 07/09/1993 and 12/13/1996. This rule was submitted for inclusion in the SIP but it is presumed there was no action and the submission was withdrawn effective 08/27/1996 (61 FR 43976). Therefore, Rule 1130.1 is not in the SIP for the Blythe/Palo Verde Valley portion of the MDAQMD.

2. SIP Analysis.

The District will request CARB to submit the proposed amendments of Rule 1117 to replace the SIP versions in effect in the San Bernardino County portion of the MDAB and the Blythe/Palo Verde Valley portion of Riverside County. This submission is necessary because there are two different SIP versions currently in effect within the MDAQMD.

Since there are previously existing SIP rules for this category the District will request that they be superseded. In order to replace existing SIP rules the District is required to show that the proposed amendments are not less stringent than the provisions currently in the SIP. The proposed rule is more stringent than the prior rules because it has been amended to include all CTG categories for paper, film, foil and fabric coating operations. The VOC limits for inks, adhesives, coatings, fountain solutions, solvents and emission control systems are more stringent than previous rule versions (MDAQMD Rule 1117 and SCAQMD Rule 1130).

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Appendix "A"

Rule 1117 – *Graphic Arts and Paper, Film, Foil and Fabric Coatings*

Iterated Version

The iterated version is provided so that the changes to an existing rule may be easily found. The manner of differentiating text is as follows:

1. Underlined text identifies new or revised language.

2. ~~Lined out text~~ identifies language which is being deleted.

3. Normal text identifies the current language of the rule which will remain unchanged by the adoption of the proposed amendments.

4. *[Bracketed italicized text]* is explanatory material that is not part of the proposed language. It is removed once the proposed amendments are adopted.

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RULE 1117
Graphic Arts and Paper, Film, Foil and Fabric Coatings

(A) General

(1) Purpose: To reduce emissions of ~~volatile~~ Volatile ~~organic~~ Organic ~~compounds~~ Compounds (VOC) from ~~operations~~Graphic Arts Printing Operations, Digital Printing Operations, and Paper, Film, Foil or Fabric Coating Operations. *[Derived from SJVUAPCD Rule 4607 §1.0]*

(2) Applicability. The provisions of this rule apply to:

(a) ~~Any packaging rotogravure, publication rotogravure, or flexographic~~This rule is applicable to any ~~printing operation~~Graphic Arts Printing Operations, Digital Printing Operations, and Paper, Film, Foil or Fabric Coating Operation and to the Solvent cleaning materials and processes associated with such Operations. *[Derived from SJVUAPCD Rule 4607 §2.0]*

(b) Any person who manufactures any ~~ink~~Ink, coating, or ~~adhesive~~Adhesive containing VOC which is sold, offered for sale, or supplied for use in ~~packaging rotogravure, publication rotogravure, or flexographic printing operations~~Graphic Arts ~~Printing~~and Paper, Film, Foil and Fabric Coating Operations in the District.

(B) Definitions

For the purposes of this rule, the following definitions shall apply: *[New rule definitions are derived from SJVUAPCD Rule 4607 unless otherwise indicated]*

(1) "Adhesive" – A material that is applied for the primary purpose of bonding two surfaces together by surface attachment. Adhesives may be used to facilitate the attachment of two surfaces or substances in varying degrees of permanence. *[Derived from BAAQMD Rule 8-20 §8-20-237]*

(2) "Aerosol Product" – A hand-held, non-refillable container that expels a pressurized Solvent-containing product by means of a Propellant induced force.

(3) "Application Equipment" – A device, including, but not limited to, a spray gun, brush, roller, and a printing press, used to apply Adhesives, coatings, or Inks.

(4) "Bench Scale Project" – A project (other than at a Research and Development facility) that is operated on a small scale, such as one capable of being located on a laboratory bench top.

(5) "Blanket" – A synthetic rubber mat used to transfer or "offset" an image from a printing plate to paper or other substrate, commonly used in offset-lithography.

(6) "Blanket Repair Material" – The material used in offset printing to correct low spots in the press Blanket.

(7) "Blanket Wash" – A Solvent used to remove Ink from the Blanket of a press.

(8) "California Air Resources Board (CARB)" – The California State Air Resources Board the powers and duties of which are described in Part 2 of Division 26 of the California Health & Safety Code (commencing with section 39500). *[Derived from MDAQMD Rule 1133]*

(9) "Capture Efficiency (CE)" – In percent, is the ratio of the weight of the VOC in the effluent stream entering the Control Device to the weight of VOC emitted from the Operation, both measured simultaneously, and can be calculated by the following equation:

$$Capture\ Efficiency = \left[W_c \Big/ W_e \right] \times 100$$

Where:

Wc = weight of VOC entering Control Device
We = weight of VOC emitted from the Operation

(~~1~~10) "~~"~~Coating" – ~~":~~ The application of a uniform layer of material across the entire width of a substrate. Those machines which have both Coating and printing units should be considered as performing a printing Operation. Coating applications that are not performed in association with a printing Operation are considered Coating Operations and are not Graphic Arts Printing Operations.~~A thin layer of material applied to a substrate in a relatively unbroken film.~~

(11) "Coating Line" –A series of Coating applicators, flash-off areas, and any associated curing/drying equipment between one or more unwind/feed stations and one or more rewind/cutting stations.

(12) "Control Device" – Equipment such as an incinerator or adsorber, or cooler/condenser filtration used to prevent air pollutants from being emitted into the atmosphere.

(13) "Control Device Efficiency" – In percent, is the ratio of the weight of the VOC removed by the Control Device from the effluent stream entering the Control Device to the weight of the VOC in the effluent stream entering the Control Device, both measured simultaneously, and can be calculated by the following equation:

$$Control\ Device\ Efficiency = \left[\left(W_c - W_d \right) / W_c \right] \times 100$$

Where:

Wc = Weight of VOC entering Control Device

Wd = Weight of VOC discharged from the Control Device

(14) "Conventional Printing Operations" – Those printing Operations that utilize physical masters, stencils, screens or plates during the printing process. Conventional Printing Operations use technologies including but not limited to lithography, flexography, Gravure, Letterpress, and Screen Printing.

(15) "Cured Adhesive, Cured Coating, or Cured Ink" – An Adhesive, Coating, or Ink that is dry to the touch.

(16) "Die Coater (or Slit Coater)" – A type of Application Equipment that coats an object by flowing Coatings through a slit directly onto the object moving past the slit.

(17) "Digital Printer" – A printing device that uses a computer-driven machine to transfer an electronic image to a substrate through the use of Inks, toners, or other graphic materials. Digital printing technologies include, but are not limited to, various forms of Ink Jet, Thermography, Electrophotography, Ionography, and Magnetography.

(18) "Digital Printing Operations" – Those Operations that do not use a physical master, stencils, or plates but use digital data to control the deposition of Ink, toner, or dye to create images.

(19) "Dip Coater" – A type of Application Equipment that coats an object by submerging the object in a vat of Coating, and subsequently withdrawing the object and draining off the excess Coating.

(20) "Doctor Blade" – A steel blade used to scrape excess Ink from a printing plate or Inking cylinder.

(21) "Dryer" – A hot air, high velocity system used to dry Inks on printed or coated substrate.

(22) "Dye Sublimation" – An imaging process that vaporizes colorant with heat and pressure, and deposits it onto a substrate in order to simulate a continuous tone image. Dye Sublimation is a digital printing technology.

(23) "Electron Beam Ink" – Ink that, when exposed to electron energy, crosslinks or solidifies in milliseconds.

(24) "Electrophotograpy" – A digital printing technology that works by recording an image on a drum in the form of an electrostatic charge, which is then transferred to the substrate. Electrophotography includes such technologies as laser printers, xerography, and Liquid Electrophotography.

(25) "Electrostatic Application" – A method of applying Coating whereby atomized paint droplets are charged and subsequently deposited on the substrate by electrostatic attraction.

(~~2~~26) "Exempt Compound" – Those compounds listed in 40 Code of Federal Regulations (CFR) 51.100(S)(1). *[Derived from MDAQMD Rule 1162]*~~"Exempt Compounds": Any of the following compounds:~~

~~methane,~~

~~carbon monoxide,~~

~~carbon dioxide,~~

~~carbonic acid,~~

~~metallic carbides or carbonates,~~

~~ammonium carbonate,~~

~~1,1,1-trichloroethane,~~

~~methylene chloride,~~

~~trichlorofluoromethane (CFC-11),~~

~~dichlorodifluoromethane (CFC-12),~~

~~chlorodifluoromethane (HCFC-22),~~

~~trifluoromethane (HFC-23),~~

~~1,1,1-trichloro-2,2,2-trifluoroethane (CFC-113),~~

~~1-chloro-1,1-difluoro-2-chloro-2,2-difluoroethane (CFC-114),~~

~~chloropentafluoroethane (CFC-115),~~

~~2,2-dichloro-1,1,1-trifluoroethane (HCFC-123),~~

~~2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124),~~

~~pentafluoroethane (HFC-125),~~

~~1,1,2,2-tetrafluoroethane (HFC-134),~~

~~1,1,1,2-tetrafluoroethane (HFC-134a),~~

~~1,1-dichloro-1-fluoroethane (HCFC-141b),~~

~~1-chloro-1,1-difluoroethane (HCFC-142b),~~

~~1,1,1-trifluoroethane (HFC-143a),~~

~~1,1-difluoroethane (HFC-152a),~~

~~and the following four classes of perfluorocarbon (PFC) compounds:~~

~~(i) cyclic, branched, or linear, completely fluorinated alkanes,~~

~~(ii) cyclic, branched, or linear, completely fluorinated ethers with no unsaturations,~~

~~(iii) cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations, and~~

~~(iv) saturated perfluorocarbons containing sulfur with sulfur bonds only to carbon and fluorine.~~

(27) "Extreme Performance Ink/Coating" – An Ink or Coating used in Screen Printing on a Non-Porous Substrate that is designed to resist or withstand any of the following:

(a) More than two years of outdoor exposure; or

(b) Exposure to industrial-grade chemicals, Solvents, acids, or detergents, oil products, cosmetics, temperatures exceeding 170^{o}F, vacuum-forming, embossing or molding.

(28) "Fabric Coating" – Any decorative or protective Coating or reinforcing material applied or impregnated into textile fabric, vinyl coated textile fabric, or vinyl sheets.

(29) "Film Coating" – A Coating applied in a Web Coating process on any film substrate other than paper or fabric, including but not limited to typewriter ribbons, photographic film, magnetic tape, and metal foil gift wrap, but excluding Coatings applied to packaging used exclusively for food and health care products for human or animal consumption.

(30) "Fine Arts Painting" – Any unique visual representation, consisting of paint, Ink, or other media, hand applied to a substrate of canvas, wood, paper, metal, or other material.

(31) "Flexible Packaging" – Any package or part of a package the shape of which can readily be changed. Flexible Packaging includes, but is not limited to, bags, pouches, liners, and wraps utilizing paper, plastic, film, aluminum foil, metalized or coated paper or film, or any combination of these materials.

(~~3~~32) "~~"~~Flexographic Printing" – "~~:~~ The application of words, designs, or pictures to a substrate by means of a roll printing technique in which the pattern ~~to be~~ is applied ~~is raised above the printing roll and the~~to an image carrier ~~is~~ made of rubber or other elastomeric material. The image to be printed is raised above the carrier surface, while the non-image area is not raised.

(33) "Flow Coater" – A Coating application system with no air supplied to the nozzle and where paint flows over the part and the excess Coating drains back into the collection system.

(34) "Foam Coater" – A Coating application system that coats an object by flowing foam through holes or a slit directly onto the object moving underneath it.

(35) "Foil Coating" – A Coating applied in a Web Coating process on any foil substrate other than paper or fabric, including but not limited to typewriter ribbons, photographic film, magnetic tape, and metal foil gift wrap, but excluding Coatings applied to packaging used exclusively for food and health care products for human and animal consumption.

(36) "Fountain Solution" – Solution composed mainly of water and contains at least one of the following materials: etchants such as mineral salts; hydrophilic gums; or other additives, which is applied to the image plate to maintain the hydrophilic properties of the non-image areas.

(437) "~~"~~Fugitive Emissions" – ~~":~~ Uncollected emissions of VOC from any portion of the printing, coat or ~~lamin~~Laminating ~~operation~~Operation other than from the Dryer.

(538) "~~"~~Grams of VOC per Liter of ~~Coating (or~~ Ink, Coating, ~~or~~ Adhesive, or Wash Primer ~~), Excluding~~Less Water and Less Exempt Compounds~~"~~ (VOC Content)" – ~~:~~ The weight of VOCs emitted during use, ~~coating~~Coating, curing or drying per combined volume of VOC and of Ink, Coating, Adhesive, or Wash Primer~~coating (or ink or adhesive)~~ solids and can be calculated by the following equation:

$$\frac{Grams\ VOC_{(less\ water\ and\ exempt\ compounds)}}{Liter\ of\ Coating} = \left[(W_s - W_w - W_{es}) \Big/ (V_m - V_w - V_{es}) \right]$$

Where: W_s = weight of volatile compounds, in grams
W_w = weight of water, in grams
W_{es} = weight of ~~exempt~~ Exempt ~~compounds~~Compounds, in grams
V_m = volume of material, in liters
V_w = volume of water, in liters
V_{es} = volume of ~~exempt~~ Exempt ~~compounds~~Compounds, in liters

(39) Grams of VOC Per Liter of Material" – The weight of VOC per volume of material and can be calculated by the following equation:

$$Grams\ of\ VOC\ per\ Liter\ of\ Material = \left[(W_s - W_w - W_{es}) \Big/ V_m \right]$$

Where: W_s = weight of volatile compounds, in grams
W_w = weight of water, in grams
W_{es} = weight of Exempt Compounds, in grams
V_m = volume of materials, in liters

(40) "Graphic Arts Coating" – The application of a uniform layer of material across the entire width of a substrate. Those machines which perform both Coating and printing should be considered as performing a printing Operation. For purposes of this rule, digital printing is not considered Graphic Arts Coating Operations.

(41) "Graphic Arts Printing Operations" – Those Operations employing Conventional Printing Operations, or any Coating or Laminating process associated with Conventional Printing Operations to produce published products and packages. Solvent cleaning Operations performed in order to

produce published products and packages are considered to be part of Graphic Arts Printing Operations.

(~~6~~42) "~~"~~Gravure Printing" – ~~":~~ An ~~intaglio~~ Intaglio ~~printing~~ Printing ~~operation~~Operation in which the ~~ink~~Ink is transferred from minute etched wells on a ~~plate~~ cylinder to the substrate, which is supported by an impression roller, with excess ~~ink~~Ink removed from the cylinder by a ~~doctor blade~~Doctor Blade.

(43) "Hand Application Method" – A method of applying a Coating to a substrate using manually held, non-mechanically operated equipment. Such equipment includes paintbrushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags, and sponges.

(44) "Heatset Ink" – A quick-drying Ink in which the Solvents are vaporized by passing the printed surface through a heater or Oven.

(45) "High-Volume, Low-Pressure (HVLP) Spray Equipment" – Equipment used to apply materials by means of a spray gun which is designed and intended to be operated, and which is operated, between 0.1 and 10.0 psig of air atomizing pressure, measured dynamically at the center of the air cap and the air horns, and which achieves a minimum 50 percent transfer efficiency. *[derived from ….]*

~~(7) "Ink Additive": That solvent which is added to printing inks to reduce viscosity.~~

(46) "Ink" – A pigmented and/or dyed liquid or paste used in a graphic arts operation typically for printing, impressing, or transferring an image onto a substrate. *[Derived from BAAQMD Rule 8-20 § 8-20-239]*

(47) "Ink Jet" – A digital printing technology in which Ink is ejected through printheads onto a substrate to create an image.

(48) "Intaglio Printing" – Printing done from a plate or cylinder in which the image is sunk below (etched or engraved into) the surface.

(49) "Ionography" – A digital printing technology that utilizes a directed array of ions to create a charge on a nonconductive surface to create an image. Ionography can also be known as ion deposition or electron charge deposition printing.

(50) "Key System Operating Parameters" – Those parameters necessary to ensure compliance with (C)(6), including, but not limited to, temperature, pressure drop, and air flow rate.

(~~8~~51) "~~"~~Lamination" – ~~":~~ A process of bonding two or more layers of material to form a single, ~~multiple~~ multiple-layer sheet by using an ~~adhesive~~Adhesive.

(~~9~~52) "~~"Letterpress~~Letterpress ~~printing~~Printing" – ~~":~~ A printing method where the image area is raised relative to the non-image area and the ~~ink~~Ink is transferred to the paper directly from the image surface.

(53) "Line" – The minimum equipment which is required for the application, drying, and/or curing of Inks, Ultraviolet Inks, and/or Coatings on a substrate, including the Ink and/or Coating applicators and drying systems, and associated Ink and Coating agitation and delivery systems.

(54) "Liquid Leak" – A visible Solvent leak from a container at a rate of more than three drops per minute, or a visible liquid mist.

(55) "Liquid Electrophotography (LEP)" – A digital printing technology that records a latent electrostatic image on a photoconductive surface, such as a drum or belt. The image created by applying toner to the charged areas of the photoconductor is electrically transferred to an intermediate surface. In a second transfer process, the image is released from the Blanket surface to the final substrate, cooling rapidly as the substrate passes between the Blanket and an impression drum, causing the image to "peel off" the Blanket and be affixed to the substrate. This Operation repeats itself on the one printing station for every color separation in the image.

(~~10~~56) "~~"~~Lithographic ~~printing~~Printing" – ~~":~~ Printing by a planographic method in which the image and non-image areas are on the same plane.

(57) "Magnetography" – A digital printing technology whereby an image is printed using a magnetic toner, electromagnetic write heads, and magnetic fields on an imaging drum.

(58) "Maintenance Cleaning" – A Solvent cleaning Operation or activity carried out to keep tools, machinery, equipment (excluding Ink, Coating, or Adhesive Application Equipment) or general work areas in clean and good operational condition.

(59) "Manufacturing Process" – The process of making goods or articles by hand or by machine.

(60) "Matte Finish Ink" – A Ink which is applied on Non-Porous Substrates in Flexographic Printing Operations and contains at least five percent by weight silicon dioxide flattening agent.

(61) "Metallic Finish Ink" – A Ink which is applied on Non-Porous Substrates in Flexographic Printing Operations and contains at least 28 percent by weight elemental metal particles.

(62) "Metallic Ink" – Ink containing at least 50 grams of elemental metal particles per liter of Ink (0.4 lb/gal) as applied and which is not used in the manufacture of an electronic circuit.

(63) "Non-Absorbent Container" – A container made of non-porous material that does not allow the migration of Solvents through it.

(64) "Non-Atomized Solvent Flow" – Solvents in the form of a liquid stream without the introduction of any Propellant.

(65) "Non-Heatset Ink" – An Ink which dries by oxidation and/or absorption into the substrate without use of heat from Dryers or Ovens.

(66) "Non-Leaking Container" – A container without Liquid Leak.

(67) "Non-Porous" – Any substrate whose surface prevents penetration by water, including but not limited to foil, polyethylene, polypropylene, cellophane, metalized polyester, nylon, and polyethylene terephthalate (mylar), paper or paperboard coated with non-porous surface. Clay coated printing paper as defined by the American Paper Institute Classification System, and paperboard coated with clay to prevent water penetration, shall be considered Non-Porous.

(~~11~~68) "~~"~~Offset Lithographic Printing" – "~~:~~ A planographic method in which the image and non-image areas are on the same plane and where the ~~ink~~Ink is transferred from an image plate on one cylinder to an image ~~blanket~~Blanket on a different cylinder. ~~-~~The ~~ink~~Ink is finally transferred from the image ~~blanket~~Blanket to the surface to be printed.

(69) "On-Press Component" – A part, component, or accessory of a press that is cleaned while still being physically attached to the press.

(70) "Operation" – Any physical action resulting in a change in the location, form, or physical properties of a material, or any chemical action resulting in a change in the chemical composition or the chemical or physical properties of a material.

(71) "Operator" – Includes but is not limited to any person who owns, leases, supervises, or operates a facility and/or equipment.

(~~12~~72) "~~"~~Oven" – "~~:~~ A heating chamber which uses heat, ultraviolet (UV) radiation, or electron beam (EB) radiation to bake, cure, polymerize, or dry a surface ~~coating~~Coating.

(~~13~~73) "~~"~~Packaging Gravure" – "~~:~~ Gravure ~~printing~~ Printing on paper, paperboard, foil, film or other substrates which are to be used to produce containers or packages.

(~~14~~74) "~~"~~Pantone ~~Color~~Ink" – ~~":~~ An ~~printing ink~~Ink created for color matching by combination of ~~process ink~~Process Inks.

(75) "Paper Coating" – Any Coating applied on or impregnated into paper, including, but not limited to, Adhesive tapes and labels, book covers, post cards, office copier paper, drafting paper, and pressure sensitive tapes.

(76) "Plastisizer" – A material used to keep plastic material soft and viscous.

(77) "Plastisol" – A Coating that is a liquid dispersion of small particles of resins and Plastisizers that are fused to become a plastic.

~~(15) "Printing Ink": Any fluid or viscous composition used in printing, impressing, or transferring an image onto a substrate~~

(78) "Porous" – A substrate whose surface does not prevent penetration by water, including but not limited to, paper, paperboard, and any paper product coated with a porous material.

(~~16~~79) "~~"~~Process Ink" – ~~":~~ The hues yellow, magenta, and cyan, plus black used in the four-color print process.

(80) "Proof Press" – A press used only for printing a sample copy of a graphic art product to check the quality of print, color reproduction and editorial content.

(81) "Propellant" – Any gas, including air, in a pressure container for expelling the contents when the pressure is released.

(~~17~~82) "~~"~~Publication ~~rotog~~Gravure" – ~~": Gravure printing~~Gravure Printing on ~~paper~~ a substrate which is subsequently formed into books, magazines, catalogues, brochures, directories, newspaper supplements or other types of printed material.

(83) "Removable Press Component" – A part, component, or accessory of a press that is physically attached to the press but is disassembled and removed from the press prior to being cleaned. Rollers, Blankets, metering rollers, fountains, impression cylinders and plates shall not be considered as Removable Press Components.

(84) "Repair Process" – The process of returning a damaged object or an object not operating properly to good condition.

(85) "Research and Development" – A facility or portion thereof used to further the development of useful materials, devices, systems, or methods, including, but not limited to, design, development, and improvement of prototypes and processes. Research and Development does not include the Manufacturing Process itself.

(86) "Resists" – Inks that are Screen Printed to form the required patterns, alphabets, numerals, designs, or symbols on the surface of the substrate; protect the Screen Printed or covered surface from the subsequent application of etching or plating solution; and are later removed from the substrate by a resist stripper. Resist applications include, but are not limited to, etched electronic circuits, display screens, chemical milling of parts, nameplates and signage.

(87) "Roll Coater" – A type of Application Equipment in which a series of mechanical rollers form a thin Coating film on the surface of a roller, which is subsequently applied to a substrate by moving the substrate underneath the roller.

(88) "Roller Wash" – A Solvent used to remove Ink from the rollers of a press.

(~~18~~89) "~~"~~Screen Printing" – "~~:~~ A process where the ~~printing ink~~Ink passes through a ~~web~~Web or a fabric to which a refined form of stencil has been applied. The stencil openings determine the form and dimensions of the imprint.

(90) "Screen Printing Metallic Ink" – An Ink used in Screen Printing that contains greater than 50 grams of elemental metal per liter (0.4 lb/gal) of Ink as applied.

(91) "Sign Ink/Coating" – An Ink or Coating used in Screen Printing indoor and outdoor signs (excluding structural components) and murals, including lettering enamels, poster colors, copy blockers, and bulletin enamels.

(92) "Solvent" – Any liquid containing a volatile organic compound or combination of volatile organic compounds, which is used as a diluent, thinner, dissolver, viscosity reducer, cleaning agent, or for other similar uses. *[Derived from SJVUAPCD Rule 4663 §3.36]*

(93) "Solvent Flushing" – The use of a Solvent to remove uncured Adhesives, uncured Inks, uncured Coatings, or contaminants from the internal surfaces and passages of equipment by flushing Solvent, by a Non-Atomized Solvent Flow, through the equipment.

(94) "Specialty Flexographic Printing" – A Flexographic Printing on polyethylene or polypropylene food packaging, fertilizer bags, or liquid-tight food containers.

(95) "Specialty Gravure Printing" – Printing that uses the gravure process for production of wall and floor covering, decorated household paper products such as towels and tissues, cigarette filter tips, vinyl upholstery, woodgrains, and a wide variety of other products.

(96) "Specialty Ink" – An Ink that is applied only on Non-Porous Substrates in Flexographic Printing Operations, and is either:

(a) A Metallic Ink that contains at least 28 percent elemental metallic powder, by weight; or

(b) A matte finish Ink containing at least 5 percent silicon dioxide flattening agent, by weight.

(97) "Stripping" – The use of Solvent to remove material such as Cured Adhesives, Cured Inks, cured or dried paint, cured or dried paint residue or temporary protective Coating.

(98) "Substrate Retention Factor" – A fraction, expressed in percent, of VOCs in lithographic Inks which is retained in the substrate when the Inks dry by adsorption or absorption.

(99) "Surface Preparation" – The removal of contaminants from a surface prior to the application of Coatings, Inks, or Adhesives or before proceeding to the next step of a Manufacturing Process.

(100) "Thermography" – A digital printing technology that creates an image via a chemical reaction that occurs when portions of a thermal-coated substrate are subjected to heat. Thermographic technologies include but are not limited to thermal wax transfer, multi-bit thermal wax transfer, and Dye Sublimation.

(101) "Thin Film UV Ink" – An Ultraviolet Ink for which <0.2 g will cover an area of ≥225 cm^2 (35 in^2), using the following formula: *[Derived from EPA Method 24]*

$$C = F \times A \times D_c$$

Where: A = area of substrate in cm^2 (or in^2)
C = amount of Ink added to the substrate in g
D_c = density of Ink in g/cm^3 (or g/in^3)
F = manufacturer's recommended film thickness in cm (or in)

(102) "Thinner" – A Solvent that is used to dilute Coatings or Inks to reduce viscosity, color strength, and solids, or to modify drying conditions.

(103) "Ultraviolet (UV) Ink" – An Ink which dries by polymerization reaction by ultraviolet or electron beam radiation.

(104) "USEPA" – The United States Environmental Protection Agency, the Administrator of the USEPA and his or her authorized representative. *[Derived from MDAQMD Rule 1165]*

(~~19~~105) Volatile Organic Compound (VOC) – Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions and those compounds listed in 40 CFR 51.100(s)(1). *[Derived from MDAQMD Rule 1162]* ~~"Volatile Organic Compounds (VOCs)": Any compound containing at least one atom of carbon, except exempt organic compounds.~~

(106) "Wash Primer" – A material used to clean and/or to activate surfaces of paper or fabric that contains no more than 5 percent, by weight, solid materials.

(107) "Waste Solvent Material" – Any Solvent which may contain dirt, oil, metal particles, sludge, and/or waste products, or wiping material containing VOCs including, but not limited to, paper, cloth, sponge, rag, or cotton swab used in Solvent cleaning.

(108) "Water Slide Decal" – A decal that is Screen Printed onto treated paper stock and is removable from the stock by the dissolution of an underlying water- soluble Adhesive or similar carrier.

(109) "Web" – A continuous sheet of substrate.

(110) "Web Feed" – An automatic system which supplies substrate from a Web.

(111) "Web Splicing Adhesive" – An Adhesive used to join two continuous rolls of substrate materials.

(112) "Wipe Cleaning" – A Solvent cleaning activity performed by hand rubbing an absorbent material such as a rag, paper, sponge, brush, or cotton swab containing Solvent.

(C) Requirements

(1) Graphic Arts Printing Operation *[Derived from SJVUAPCD Rule 4607 §5.1]*

~~No packaging rotogravure, publication rotogravure, or flexographic printing operation shall use any inks, coatings, or adhesives unless the grams of VOC per liter of coating (or ink or adhesive), excluding water and exempt Compounds, as applied, is less than 300 grams per liter (2.5 lbs/gallon).~~

(a) An Operator performing a Graphic Arts Operation, not subject to (C)(2), (C)(3), (C)(4), and (C)(5), shall not use graphic arts materials containing VOC in excess of the limits in Table 1 and Table 2, in accordance with the effective date.

Table 1

VOC Content Limits for Inks, Coatings and Adhesives		
Material	Grams of VOC per liter (lb/gal), less water and less exempt compounds, as applied, effective through July 31, 2010	Grams of VOC per liter (lb/gal), less water and less Exempt Compounds, as applied, effective on and after August 1, 2010
Flexographic Ink on Porous Substrates	300 (2.5)	225 (1.88)
All other Inks	300 (2.5)	300 (2.5)
Coatings	300 (2.5)	300 (2.5)
Adhesives	300 (2.5)	150 (1.25)
Web Splicing Adhesives	300 (2.5)	150 (1.25)

Table 2

VOC Content Limits for Fountain Solutions	
Fountain Solution	Percent VOC by volume, effective on and after August 1, 2010
Heatset Web Offset Lithographic	1.6
Coldset Web Offset Lithographic	5.0
Sheet-fed Offset Lithographic with maximum sheet size greater than 11 x 17 inches	5.0
All other presses	8.0

(2) Flexographic Specialty Ink *[Derived from SJVUAPCD Rule 4607 §5.2]*

(a) An Operator using a Flexographic Printing Operation shall not use a Specialty Ink in excess of the VOC limit in Table 3, and shall not use more than two (2) gallons of Specialty Inks in a calendar day and 120 gallons of Specialty Inks in a calendar year.

Table 3

VOC Content Limits for Flexographic Specialty Ink	
Material	Grams of VOC per liter (lb/gal), less water and less exempt compounds, as applied, effective on and after August 1, 2010
Metallic Ink	460 (3.8)
Matte Finish Ink	535 (4.5)
Metallic Ink and Matte Finish Ink on Flexible Package Printing	383 (3.2)

(b) On and after ~~January~~August 1, 2010, facilities with the potential to emit or with actual emissions of at least 10 tons VOC in any calendar year shall not use Specialty Inks with VOC content greater than 300 grams VOC per liter, less water and Exempt Compounds, as applied.

(3) Coldset Web Offset Lithographic Fountain Solution *[Derived from SJVUAPCD Rule 4607 §5.3]*

(a) On and after August 1, 2010, an Operator performing coldset Web Offset Lithographic Printing shall use Fountain Solution that is five percent alcohol substitute or less, by weight, and shall have no alcohol in the Fountain Solution.

(4) Screen Printing Operation *[Derived from SJVUAPCD Rule 4607 §5.4]*

(a) An Operator using a Screen Printing Operation shall not use graphic arts materials in excess of the VOC content limits, as applied, in Table 4.

Table 4

VOC Content Limits for Screen Printing Inks, Coatings, and Adhesives	
Material	Grams of VOC per liter (lb/gal), less water and less Exempt Compounds on and after August 1, 2010
Inks and Coatings, including Extreme Performance, Metallic and Sign/Ink	400 (3.3)
Adhesives	150 (1.25)
Resists	600 (5.0)

(5) Paper, Film, Foil, or Fabric Coating Operations *[Derived from SJVUAPCD Rule 4607 §5.5]*

(a) An Operator using a Paper, Film, Foil, or Fabric Coating Operation shall not use any Coating or Wash Primer in excess of the VOC content limits, as applied, in Table 5.

Table 5

VOC Content Limits of Paper, Film, Foil, or Fabric Coating and Wash Primer		
Material	VOC Content Limit, effective through July 31, 2010	VOC Content Limit, effective on and after August 1, 2010
Coating	300 gm/liter (2.5 lb/gal) of Coating, less water and less Exempt Compounds	265 gm/liter (2.2 lb/gal) of Coating, less water and less Exempt Compounds
Wash Primer	300 gm/liter (2.5 lb/gal) of Coating, less water and less Exempt Compounds	265 gm/liter (2.2 lb/gal) of Coating, less water and less Exempt Compounds
Plastisols	—	20 gm/liter (0.16 lb/gal)

(b) On and after ~~January~~August 1, 2010, an Operator performing pressure sensitive tape and label surface Coating Operations shall not use any VOC content materials or combinations of materials that exceed a VOC content of either 0.20 kg of VOC/kg of solids (0.20 lb VOC/lb of solids), as applied, or an additional limit of 0.067 kg VOC/kg of Coating (0.067 lb of VOC/lb of Coating), as applied.

(~~2~~6) Approved VOC Emission Control System *[Derived from SJVUAPCD Rule 4607 §5.6]*

(a) Heatset Web Offset Lithographic or Letterpress

On or after August 1, 2010, and Operator performing Heatset Web Offset Lithographic or Letterpress Printing that has greater than 25 tpy potential to emit prior to controls shall use an add-on Control Device on the Dryers, as follows:

(i) Heatset Web offset lithographic or letterpress printer Control Device installed prior to July 31, 2010 shall have an overall capture and control efficiency of 90%.

(ii) Heatset Web offset lithographic or letterpress printer Control Device installed on or after August 1, 2010 shall have an overall capture and control efficiency of 95%.

(b) In lieu of the requirements of Subsection (C)(1), (C)(2), (C)(3), (C)(4) and (C)(5), emissions of VOC may be controlled by an emission capture and control system, which reduces VOC emissions to the atmosphere, provided that:

(~~a~~i) The VOC emission control system shall be approved, in writing, by the Air Pollution Control Officer (APCO).

(ii) During continuous operation, not to exceed 24 hours, the VOC emission control system shall have a minimum overall VOC capture and control efficiency as specified in Table 6, in accordance with the corresponding effective date;~~Averaged over any period of continuous operation not to exceed 24 hours, the control device reduces the VOC emissions delivered from the capture system to the control device by at least 90 percent, by weight; and,~~

~~(b) Averaged over any period of continuous operation not to exceed 24 hours, the combined effects of the capture and control system shall provide an overall emission reduction efficiency of at least:~~

~~(i) 75 percent, by weight, for publication rotogravure, or~~

~~(ii) 65 percent, by weight, for packaging rotogravure, or~~

~~(iii) 60 percent, by weight, for flexographic printing operations; and,~~

Table 6

VOC Emission Control System Overall Capture and Control Efficiency		
Process	Overall VOC capture and control efficiency %, by weight, effective through July 31, 2010	Overall VOC capture and control efficiency %, by weight, effective on and after August 1, 2010
Flexible Package Printing (All Technologies)	65%	80%
Publication Gravure	75%	85%
Flexographic Printing Operations	60%	n/a
Other Printing Operations	n/a	75%
Paper, Film, Foil, or Fabric Coating Operations	n/a	90%

(c) The collection system shall vent all drying ~~oven~~Oven exhaust to the ~~control device~~Control Device and shall have one or more inlets for collection of ~~fugitive~~ Fugitive ~~emissions~~Emissions; and,

(d) During any period of operation of a thermal incinerator, combustion temperature shall be continuously monitored; and,

(e) During any period of operation of a catalytic incinerator, exhaust gas temperature shall be continuously monitored; and,

(f) Appropriate permit(s) for the emission capture and control system are obtained pursuant to District regulations.

(g) The VOC emission control system shall reduce VOC emissions, at all times, to a level that is not greater than the emissions which would have been achieved through the use of compliant materials, compliant equipment or compliant work practices in Sections (C)(1), (C)(2), (C)(3), (C)(4), (C)(5), and (C)(8).

(7) Coating Application Equipment *[Derived from SJVUAPCD Rule 4607 §5.7]*

No Operator shall apply Coatings unless Coatings are applied with equipment operated according to manufacturer's specifications, and only by the use of one of the following types of Coating Application Equipment:

(a) Flow Coater;

(b) Roll Coater;

(c) Dip Coater:

(d) Foam Coater;

(e) Die Coater;

(f) Hand Application Methods; or

(g) High-volume, low-pressure (HVLP) spray for air dried Coatings.

(i) For HVLP spray guns manufactured prior to January 1, 1996, the end user shall demonstrate that the gun meets HVLP spray equipment standards. Satisfactory proof will be either in the form of manufacturer's published technical material or by a demonstration using a certified air pressure tip gauge, measuring the air atomizing pressure dynamically at the center of the air cap and at the air horns.

(ii) A person shall not sell or offer for sale for use within the District any HVLP spray gun without a permanent marking denoting the maximum inlet air pressure in psig at which the gun will operate within the parameters specified in (B)(53).

(h) Other Coating application methods which are demonstrated to the APCO to be capable of achieving at least 65 percent transfer efficiency as determined in accordance with Section (F). Prior written approval from the APCO shall be obtained for each alternative method used.

(i) In lieu of complying with Section (C)(7)(a) through (C)(7)(h), an Operator may control emissions from the Coating Application Equipment with a VOC emission control system that meets the requirements of Section (C)(6).

(8) Solvent Cleaning *[Derived from SJVUAPCD Rule 4607 §5.8]*

(a) An Operator shall not use Solvents for cleaning Operations that exceed the VOC content limits specified in Table 7 in accordance with the corresponding effective date.

Table 7

VOC Content Limits for Solvent Cleaning	
Type of Solvent Cleaning Operation	VOC Content Limit grams of VOC/liter of material (Lb/gal), effective on and after ~~August 1~~July 1, 201~~0~~1 *[Date changed for consistency with BAAQMD requirement at request of commenter]*
A. Product Cleaning During Manufacturing Process; or Surface Preparation for Coating, Ink, or Adhesive Application	25 (0.21)
B. Repair and Maintenance Cleaning	25 (0.21)
C. Cleaning of Coating or Adhesive Application Equipment	25 (0.21)
D. Cleaning of Ink Application Equipment	-
1. General	25 (0.21)
2. Flexographic Printing	25 (0.21)
3. Specialty Flexographic Printing	100 (0.83)
4. Gravure Printing	-
a. Publication	100 (0.83)
b. Packaging	25 (0.21)
5. Lithographic (Offset) or Letterpress Printing	-
a. Roller Wash - Step 1	100 (0.83)
b. Roller Wash - Step 2; Roller Wash - not specified; Blanket Wash, and On-Press Components	100 (0.83)
c. Removable Press Components	25 (0.21)
6. Screen Printing	100 (0.83)
7. Ultraviolet Ink/Electron Beam Ink Application Equipment (except Screen Printing)	100 (0.83)

(b) The following cleaning Operations may be performed outside of an APCO-approved VOC emission control system and using Solvent with VOC content greater than 25 g/L:

(i) Wipe Cleaning;

(ii) Application of Solvent from hand-held spray bottles from which Solvents are dispensed without a Propellant induced force;

(iii) Non-Atomized Solvent Flow method in which the cleaning Solvent is collected in a container or a collection system which is closed except for Solvent collection openings and, if necessary, openings to avoid excessive pressure build-up inside the container; or

(iv) Solvent Flushing method in which the cleaning Solvent is discharged into a container that is closed except for Solvent collection openings and, if necessary, openings to avoid excessive pressure build-up inside the container. The discharged Solvent from the equipment must be collected into containers without atomizing into the open air. The Solvent may be flushed through the system by air or hydraulic pressure, or by pumping.

(c) Solvent shall not be atomized into the open air unless it is vented to a VOC emission control system that complies with Section (C)(6). This provision shall not apply to printing Operations where the roller or Blanket Wash is applied automatically and the cleaning of nozzle tips of automated spray equipment systems, except for robotic systems, and cleaning with spray bottles or containers described in Section (C)(8)(c)(ii).

(d) An Operator shall not use VOC-containing materials to clean spray equipment used for the application of Coatings, Adhesives, or Ink, unless an enclosed system or equipment that is proven to be equally effective at controlling emissions is used for cleaning. If an enclosed system is used, it must totally enclose spray guns, cups, nozzles, bowls, and other parts during washing, rinsing and draining procedures, and it must be used according to the manufacturer's recommendations and must be closed when not in use.

(e) In lieu of complying with the provisions of Sections (C)(8)(a) through (C)(8)(d), an Operator may control emissions from cleaning Operations with an APCO-approved VOC emission control system that meets the requirements of Section (C)(6).

(~~3~~9) An Operator shall store or dispose of fresh or spent Solvents, Waste Solvent Materials, Coatings, Adhesives, catalysts, Thinners, and Ink ~~Materials containing VOCs shall be stored~~ in ~~non~~Non-~~absorbent~~Absorbent, ~~non~~Non-~~leaking~~ Leaking ~~containers~~Containers, which shall be kept closed except when adding or removing material, ~~or~~ during cleaning ~~operations~~Operations, or when the container is empty.

(~~4~~10) VOC material wastes (including but not limited to liquid wastes, rags, and packaging) shall be disposed of in a manner consistent with Federal, State, and local hazardous waste regulations.

(~~5~~11) The manufacturer of any ~~ink~~Ink, ~~coating~~Coating, or ~~adhesive~~Adhesive, except Thin Film UV Ink, which is sold, offered for sale, or supplied for use in ~~packaging~~ Packaging ~~rotogravure~~Gravure, ~~p~~Publication ~~rotog~~Gravure, or ~~flexographic~~ Flexographic ~~printing~~ Printing ~~operations~~ Operations in the District shall include the following information on the product container ~~or a data sheet~~or Material Safety Data Sheet (MSDS) supplied with the product: *[Thin Film UV Inks are exempted because there is no method for determining VOC content. ASTM D 5403-93, Standard Test Methods for Volatile Content of Radiation Curable Materials, is not applicable]*

(a) Material name, manufacturer identification, specific mixing instructions, density, and VOC content, as applied.

(b) The VOC content of ~~ink~~Inks (except Thin Film UV Ink), ~~coating~~Coatings, and ~~adhesive~~Adhesives expressed as defined in Subsection (B)(~~5~~38).

(12) Work Practices *[Specific work practices added in response to USEPA comments, derived from EPA-453/R-06-002, CTG for Offset Lithographic Printing and Letterpress Printing (September 2006), EPA 453/R-07-003, CTG for Paper, Film, and Foil Coatings (September 2007) and EPA 453/R-06-003, CTG for Flexible Packaging Printing (September 2006)]*

(a) An Operator shall properly use and properly operate all graphic arts printing technologies as directed and/or specified by the manufacturer of the printer or graphic arts material.

(b) Solvent containers and mixing tanks must be kept closed -or covered except when filling, draining, or conducting cleaning operations.

(c) Used shop towels, rags and wipes shall be kept in closed containers ~~to reduce VOC emissions~~.

(d) Clean spray guns in an enclosed system.

(e) Use recycled solvents for cleaning if available and practical.

(f) Convey cleaning materials from one location to another in closed containers or pipes.

(D) Exemptions

(1) ~~The requirements of Subsections (C)(1) and (C)(2) shall not apply to graphic arts facilities which emit less than 2500 pounds of VOC in any month from printing, coating, and adhesive operations. Once a facility becomes subject to Subsections (C)(1) and (C)(2) by exceeding this~~

~~threshold, it will remain subject to these provisions even if its emissions later fall below the applicability threshold.~~ The requirements of this rule, except for the recordkeeping requirements of section (E)(6), shall not apply to the following Operations except for Paper, Film, Foil, or Fabric Coating Operations:

(a) Effective until July 31, 2010, any Graphic Arts Printing Operation which emits less than 400 pounds of VOC per calendar month. *[Derived from SJVUAPCD Rule 4607 §4.1.1]*

(b) On or after August 1, 2010, any Graphic Arts Printing Operation that emits less than 200 pounds of VOC per 12 rolling consecutive calendar months. *[Derived from SJVUAPCD Rule 4607 §4.1.2]*

~~(c) Blanket Repair Materials used in containers of four (4) fluid ounces or less. *[Derived from SJVUAPCD Rule 4607 §4.1.3]*~~

~~(d) Digital Printers and Digital Printing Operations except for recordkeeping requirements in section (E)(5) . *[Derived from SJVUAPCD Rule 4607 §4.1.4]*~~

~~(e) Screen Printing of Waterslide Decals. *[dDerived from BAAQMD Rule 8-20, §8-20-118]* [Relocated to (D)(2)]~~

(2) The requirements of this rule shall not apply to: *[Derived from SJVUAPCD Rule 4607 §4.3]*

(a) Proof Presses;

(b) The application of Coatings and use of cleaning Solvents in creating Fine Art Paintings;

(c) Stripping of Cured Coatings, Cured Adhesives, and Cured Inks, except the Stripping of such materials from spray Application Equipment;

(d) Cleaning Operations in printing pre-press or graphic arts pre-press areas, including the cleaning of film processors, color scanners, plate processors, film cleaning, and plate cleaning.

(e) Blanket Repair Materials used in containers of four (4) fluid ounces or less. *[Derived from SJVUAPCD Rule 4607 §4.1.3]*

(f) Digital Printers and Digital Printing Operations except for recordkeeping requirements in section (E)(5) . *[Derived from SJVUAPCD Rule 4607 §4.1.4]*

(g) Screen Printing of Waterslide Decals. *[Derived from BAAQMD Rule 8-20, §8-20-118]*

(3) The provisions of section (C) shall not apply to the application of Adhesives and Coatings via Aerosol Products. *[Derived from SJVUAPCD Rule 4607 §4.4]*

(4) This rule shall not apply to laboratory tests or analyses, Bench Scale, or Research and Development Projects. *[Derived from SJVUAPCD Rule 4607 §4.5]*

(5) This rule shall not ~~apply to the use~~limit the VOC content of ~~t~~Thin ~~f~~Film UV Inks.

(6) Cleaning materials ~~used in Offset Lithographic Printing and/or Letterpress Printing Operations~~ with a VOC composite vapor pressure less than ~~10~~8 mm Hg at 20º C are exempt from section (C)(8)(a) of this rule. *[Derived from EPA-453/R-06-00~~2~~1, Control Techniques Guidelines: Industrial Cleaning Solvents ~~CTG for Offset Lithographic Printing and Letterpress Printing~~ (September 2006)]*

~~(2) Screen Printing.~~

~~(3) Letterpress Printing.~~

~~(4) Lithographic Printing~~.

(E) Monitoring and Records

Unless otherwise noted, all VOC content and density values recorded pursuant to the requirements of this rule shall be for the material as applied. ~~Packaging rotogravure, publication rotogravure, and flexographic printing operations~~Graphic Arts and Paper, Film, Foil and Fabric Coating Operations subject to this rule shall maintain the following records and information:

(1) For each ~~ink~~Ink, ~~coating~~Coating, and ~~adhesive~~Adhesive, Fountain Solution, Wash Primer, and Solvent in use and in storage:

(a) ~~a~~ A Material Safety Data Sheet (MSDS)~~data sheet~~ or ~~material list~~product data sheet giving material name, manufacturer identification, specific mixing instructions, and density; and

(b) VOC content as applied.

(2) Compliant Materials Records *[Changes derived from SJVAPCD Rule 4607 §6.1.2]*

If only ~~ink~~Inks, ~~coating~~Coatings, and ~~adhesive~~Adhesives meeting the specification found in Subsection (C)~~(1)~~ are used:

(a) Records on a ~~daily~~ daily basis showing the amount of ~~ink~~Ink used. Ink use records shall be maintained using one of the following options: *[Monthly changed back to daily at suggestion of USEPA. Had been changed to monthly to reflect SJVAPCD rule requirements.]*

(i) Group the quantity of all ~~ink~~Inks used and ~~note~~ identify the ~~highest~~ maximum VOC content figure and use the ~~lowest~~ minimum density of 1,010 gm/liter (8.44 lb/gal) ~~figure from all the inks.~~;

(ii) Itemize ~~each ink~~Process Inks and ~~p~~Pantone ~~color~~ Inks separately and use the specific VOC content and density value for each Process Ink, and the highest VOC content and the maximum density of 1,010 gm/liter (8.44 lb/gal) for Pantone Inks; ~~.~~

(iii) Report Process Inks and Pantone Inks separately and use the maximum VOC content and minimum density value for both process and Pantone Inks, or use the density of 1,010 gm/liter (8.44 lb/gal) for Pantone Inks; or

(iv) Itemize each Ink and Pantone Ink and use the specific VOC content and density value for each.

(b) Records on a ~~daily~~ ~~monthly~~daily basis showing the amount of ~~coating~~Coatings~~, and adhesive~~Adhesive, Wash Primer, and Solvent (including cleaning Solvent)~~s~~ used. Itemize each ~~coating~~Coating and ~~adhesive~~Adhesive and use the specific VOC content and density value for each.

(c) Record, on a ~~monthly~~daily basis, the type, amount, and percent VOC by volume of Fountain Solution used. *[Derived from SJVAPCD Rule 4607 §6.1.2.3]*

(3) Non-Compliant Materials Records *[Changes derived from SJVAPCD Rule 4607 §6.1.3]*

If ~~ink~~Inks, ~~coating~~Coatings, ~~or adhesive~~Adhesives, Fountain Solutions, Wash Primers, and Solvents (including non-compliant cleaning Solvent) which do not meet the specifications found in Subsection (C)~~(1)~~ are used and compliance is achieved through the use of add-on emission control equipment pursuant to (C)(6):

(a) Records on a daily basis showing the type and amount of ~~ink~~Inks, ~~coating~~Coatings, ~~and adhesive~~Adhesives, Fountain Solutions, Wash Primers, and Solvents (including non-compliant cleaning Solvent) used~~.~~ and~~Such records shall~~ itemized ~~each ink, coating, and adhesive~~ using the specific VOC content and density value for each.

(b) Daily records of ~~key~~ Key ~~system~~ System ~~operating~~ Operating ~~and maintenance parameters~~ Parameters which will demonstrate continuous ~~operation~~ Operation and compliance of the emission ~~control device~~Control Device during periods of emission producing activities. Key ~~system~~ System ~~operating~~ Operating ~~parameters~~ Parameters are those necessary to ensure compliance with VOC capture and control requirements pursuant to (C)(6) (including but not limited to temperatures, pressures, and flow rates). Such records shall be kept in the form and manner as prescribed by the APCO.

(4) Records for Flexographic Specialty Inks *[Derived from SJVAPCD Rule 4607 §6.1.4]*

If flexographic Specialty Inks are used pursuant to section (C)(2), record, on a daily basis, the type and amount of each Specialty Ink used.

(5) Digital Printing Records *[Derived from SJVAPCD Rule 4607 §6.1.6]*

(a) On or after August 1, 2010, Digital Printing Operations shall keep records in accordance with (E)(5) for each Digital Printer that:

(i) Uses Solvent-based Inks and has a print capacity of 1,000 ft^2/hr or more; or

(ii) Uses water-based Inks, or UV Inks and has a print capacity of 10,000 ft^2/hr or more,

(b) Operators with printers Subject to Section (E)(5)(a) shall keep the following records:

(i) A current file of Inks, Coatings, Adhesives, and Solvents in use and in storage. The file shall include a MSDS or product data sheet showing the material name, manufacturer's name, VOC content as applied, specific mixing instructions, and density.

(ii) Monthly records of the type, and amount of each Ink, Coating, and/or Adhesive used.

(iii) Monthly records of the type, and amount of Solvent used for thinning the Ink, Coating, or Adhesive, and for cleaning.

(~~4~~6) If the facility is claiming exempt status pursuant to Subsection (D)~~(1)~~, the facility shall maintain adequate records on a monthly basis to demonstrate the exempt status. The Operator who becomes subject to the emission limits/standards of this rule through loss of exemption in Section (D) shall not operate the subject equipment, except as required for obtaining a new

or modified Permit-to-Operate, until the Operator demonstrates that the Operation is in full compliance with the requirements of this rule.

(~~5~~7) Any record required or produced pursuant to this rule shall be retained on site for a minimum of five years and shall be made available to the APCO, CARB, or USEPA upon request.

~~(8) Compliance Statement~~

~~The manufacturer of Inks, Coatings, Adhesives, Fountain Solutions, Wash Primers, and Solvents which are sold for use in Graphic Arts Printing Operations, and Paper, Film, and Foil or Fabric Coating Operations within the District shall include a designation in the MSDS or product data sheet to include the material name, manufacturer's name, specific mixing instruction, VOC content, and density.~~ *~~[See section (C)(11), duplicative.]~~*

(~~9~~8) Determination of VOC Emissions from Inks Used in a Lithographic Printing Operation *[Derived from SJVAPCD Rule 4607 §6.3]*

For the purposes of determining compliance with emissions limits, and determining eligibility for exemption under Section (D)(1) of this rule, the amount of VOC emitted from Heatset and Non-Heatset Inks used shall be discounted by the following Substrate Retention Factors: 20 percent for Heatset Inks and 95 percent for Non-Heatset Inks. These Substrate Retention Factors shall not be used when determining compliance of Inks with applicable VOC content limits specified in this rule, and Heatset and Non-Heatset lithographic Inks shall meet the VOC content limits specified in Section (C)(1), Table 1.

(F) Test Methods

The VOC content of materials subject to the provisions of this rule and overall capture and control efficiency of VOC emission control systems shall be determined by the following test methods specified in Sections (F)(1) through (F)(7), or alternative test methods approved by the APCO, USEPA, and CARB. *[Derived from SJVUAPCD Rule 4607 §6.4]*

~~(1) Measurement of the VOC content of inks, coatings, and adhesives, except as specified in subsection (F)(2), shall be conducted and reported in accordance with EPA Reference Method 24 and ARB Method 432 for determination of exempt compounds as necessary. Perfluorocarbon compounds shall be assumed to be absent from a product or process unless a manufacturer or facility operator identifies the specific individual compounds (from the broad classes of perfluorocarbon compounds) and the amounts present in the product or process and identifies a validated test method which can be used to quantify the specific compounds.~~

~~(2) Measurement of the VOC content of publication rotogravure inks shall be conducted and reported in accordance with EPA Reference Method 24A and ARB Method 432 for determination of exempt compounds as necessary.~~

~~(3) Emissions of VOC as specified in Subsection (C)(2) shall be measured as prescribed by either EPA Reference Method 25 or EPA Reference Method 25A, for determining organic emissions, and EPA Reference Method 18, for quantifying emissions of exempt compounds.~~

~~(4) The capture and control efficiency of air pollution control equipment, as specified in Subsection (C)(2), shall be determined using applicable methods in 40 CFR 52.741.~~

(1) Except for UV Inks, the VOC content of Inks, Adhesives, Fountain Solutions, Solvents and Coatings shall be determined by using EPA Method 24 or 24A as applicable. The VOC content of UV Inks, except for Thin Film UV Inks, shall be determined by using American Society of Testing and Materials (ASTM) D5403-93 (2007) (Test Methods for Volatile Content of Radiation Curable Materials).

(2) Exempt Compound Content: Exempt compound content shall be determined by using ARB Method 432, "Determination of Dichloromethane and 1,1,1-Trichlorethane in Paints and Coatings," September 12, 1989; ARB Method 422 "Determination of Volatile Organic Compounds in Emission from Stationary Sources," January 22, 1987; or, South Coast Air Quality Management District (SCAQMD) Method 303-91 "Determination of Exempt Compounds," August 1, 1996.

(3) The content of silicon dioxide as a flattening agent in a Matte Finish Ink shall be determined by using the latest EPA approved revision of ASTM D717-86 (Standard Test Methods for Analysis of Magnesium Silicate Pigment).

(4) The metal content of Metallic Inks shall be determined by SCAQMD Test Method 318, (Determination of Weight Percent Elemental Metal In Coatings by X-Ray Diffraction).

(5) Determination of emissions of VOC from spray gun cleaning systems shall be made using SCAQMD method "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems," October 3, 1989.

(6) The transfer efficiency of alternative Coating application methods shall be determined in accordance with the SCAQMD method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User," May 24, 1989.

(7) Determination of Overall Capture and Control Efficiency of VOC Emission Control Systems

(a) The Capture Efficiency of a VOC emission control system's collection device(s) shall be determined according to EPA's "Guidelines for Determining Capture Efficiency," January 9, 1995 and 40 CFR 51, Appendix M, Test Methods 204-204F, as applicable.

(b) The control efficiency of a VOC emission control system's VOC Control Device(s) shall be determined using EPA Test Methods 2, 2A, or 2D for measuring flow rates and EPA Test Methods 25, 25A, or 25B for measuring total gaseous organic concentrations at the inlet and outlet of the Control Device(s). EPA Method 18 or ARB Method 422 shall be used to determine the emissions of Exempt Compounds.

(c) For VOC emission control systems that consist of a single VOC emission collection device connected to a single VOC emission Control Device, the overall capture and control efficiency shall be calculated by using the following equation:

$$CE_{Capture,Control} = \left[CE_{Capture} \times CE_{Control}\right] / 100$$

Where:

$CE_{Capture,Control}$ = Overall Capture and Control Efficiency, in percent

$CE_{Capture}$ = Capture Efficiency of the collection device, in percent, as determined in Section (F)(7)(a)

$CE_{Control}$ = Control Efficiency of the Control Device, in percent, as determined in Section (F)(7)(b).

(d) The following equation shall be used to determine if the minimum required overall capture and control efficiency of an emission control system is at an equivalent or greater level of VOC reduction as would be achieved using compliant materials, equipment, or work practices, as stated in Section (C)(6)(g).

$$CE = \left[1 - \left(\frac{VOC_{LWc}}{VOC_{LWn,Max}} \times \frac{1 - \left(VOC_{LWn,Max} / D_{n,Max}\right)}{1 - \left(VOC_{LWC} / D_{c}\right)}\right)\right] \times 100$$

Where:

CE = Minimum Required Overall Capture and Control Efficiency, percent

VOC_{LWc} = VOC Limit, less water and less Exempt Compounds

$VOC_{LWn,Max}$ = Maximum VOC content of noncompliant Ink (or Coating or Adhesive) used in conjunction with a Control Device, less water and less Exempt Compounds

$D_{n,Max}$ = Density of Solvent, reducer, or Thinner contained in the noncompliant Ink (or Coating or Adhesive), containing the maximum VOC content of the multi-component Ink (or Coating, or Adhesive) printing Line

D_c = Density of corresponding Solvent, reducer, or Thinner used in the compliant Ink (or Coating, or Adhesive) system = 880 gm/liter.

(8) When one or more test method or set of test methods are specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of the rule. *[Derived from MDAQMD Rule 1165 and added in response to USEPA suggestion as a provision when multiple test methods are provided.]*

[SIP: Submitted as amended mm/dd/yy on mm/dd/yy; Approved: 4/30/96, 61 FR 18962, 40 CFR 52.220(c)(198)(I)(E)(2)]

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Appendix "B"

Public Notice Documents

1. Draft Proof of Publication – Daily Press 08/28/2009
2. Draft Proof of Publication – Riverside Press Enterprise 08/28/2009

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NOTICE OF HEARING

NOTICE IS HEREBY GIVEN that the Governing Board of the Mojave Desert Air Quality Management District (MDAQMD) will conduct a public hearing on 09/28/2009 at 10:00 A.M. to consider the proposed amendment of Rule 1117 – *Graphic Arts and Paper, Film, Foil and Fabric Operations.*

SAID HEARING will be conducted in the Governing Board Chambers located at the MDAQMD offices 14306 Park Avenue, Victorville, CA 92392-2310 where all interested persons may be present and be heard. Copies of the proposed amendment of Rule 1117 – *Graphic Arts and Paper, Film, Foil and Fabric Operations* and the Staff Report are on file and may be obtained from the Clerk of the Governing Bard at the MDAQMD Offices. Written comments may be submitted to Eldon Heaston, Deputy APCO at the above office address. Comments must be received no later than 09/28/2009 to be considered. If you have any questions you may contact Tracy Walters at (760) 245-1661 x6122 for further information.

The proposed amendment of Rule 1117 – *Graphic Arts and Paper, Film, Foil and Fabric Operations* will satisfy the provisions of Health & Safety Code §39614(d) which requires the adoption of readily available, feasible and cost-effective control measures for Particulate Matter (PM) as well as to satisfy 42 U.S.C. §§7511a (Federal Clean Air Act (FCAA) §182) which requires that ozone non-attainment areas implement Reasonably Available Control Technology (RACT) for sources that are subject to Control Technique Guidelines (CTGs) and for major sources of ozone precursors.

Pursuant to the California Environmental Quality Act (CEQA) the MDAQMD has determined that a Categorical Exemption (Class 8 – 14 Cal. Code Reg §15308) applies and has prepared a *Notice of Exemption* for this action.

Michele Baird
Clerk of the Board
Mojave Desert Air Quality Management District

NOTICE OF HEARING

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The proposed amendment of Rule 1117 – *Graphic Arts and Paper, Film, Foil and Fabric Operations* will satisfy the provisions of Health & Safety Code §39614(d) which requires the adoption of readily available, feasible and cost-effective control measures for Particulate Matter (PM) as well as to satisfy 42 U.S.C. §§7511a (Federal Clean Air Act (FCAA) §182) which requires that ozone non-attainment areas implement Reasonably Available Control Technology (RACT) for sources that are subject to Control Technique Guidelines (CTGs) and for major sources of ozone precursors.

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Michele Baird
Clerk of the Board
Mojave Desert Air Quality Management District

Appendix "C"

Public Comments and Responses

1. Email from Catherine F. Jacobsen, Ph. D., DABT, 3M Materials, 06/25/2009
2. Email from USEPA, 06/25/2009
3. Letter from Marci Kinter, SGIA, 06/26/2009
4. Email from Harry Pontious, Victorille Daily Press, 06/29/2009
5. Email from Catherine F. Jacobsen, Ph. D., DABT, 3M Materials, 07/09/2009
6. Letter from Marci Kinter, SGIA, 07/20/2009
7. Email from Catherine F. Jacobsen, Ph. D., DABT, 3M Materials, 07/28/2009

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Comment Letter 1

Tracy Walters

From: cfjacobson@mmm.com
Sent: Thursday, June 25, 2009 7:47 AM
To: Tracy Walters
Subject: questions on MDAQMD Rule 1117

Hello, Ms. Walters --

I have a few questions about proposed Rule 1117 (Graphic Arts and Paper, Film, Foil and Fabric Coatings).

In the Requirements section (C)(10) [though I think it should perhaps be (C)(11)], manufacturers are required to provide on a label or data sheet the VOC content of inks. Similarly, the Monitoring and Records section (E)(8) requires manufacturers to provide on the MSDS or data sheet the VOC content of inks.

1 → (a) Do these requirements include thin film UV inks?
(b) If so, what test method should we use to determine the VOC content of these inks? They are excluded from the test methods in (F)(1), and the rule does not specify another method. Please bear in mind that -- although they are considered to be low-VOC -- there is no scientifically valid, reproducible, agency- or industry-approved direct method for determining the VOC content of these inks.
(c) If these requirements do not include thin film UV inks, can the proposal be amended to clearly exclude these inks from the requirements above?

2 → The requirement in (C)(10) [which should perhaps be (C)(11)] requires in (a) that the material name, manufacturer identification, specific mixing instructions, and VOC content as applied be provided. Subsection (b) states "The VOC content of Inks, Coatings, and Adhesives expressed as defined in Subsection (B)(5)." I am unclear about this requirement; Subsection (B)(5) appears to be the definition of "blanket." Can you please clarify what this subsection is requiring?

Thank you so much for your assistance.

-- Catherine

Catherine F. Jacobson, Ph.D., DABT
3M Material EHS
3M Center, Building 0220-06-E-03
St. Paul, MN 55144
cfjacobson@mmm.com
651-736-5932 (voice)
651-733-1773 (fax)

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District response to Comment Letter 1

1. Section (C)(10) appears numbered correctly in the preliminary draft. All numbering will be verified in final rule version for accuracy. The requirements of (C)(11) and (C)(11)(b) have been modified to exclude thin film inks because there is no approved method to determine VOC content, and exemption (D)(5) has been added.
2. The cross reference in section (C)(11)(b) was incorrect and has been changed to the proper reference of (B)(38).

Comment Letter 2

Tracy Walters

From: Alan De Salvio
Sent: Thursday, June 25, 2009 11:11 AM
To: 'Steckel.Andrew@epamail.epa.gov'; mguzzett@arb.ca.gov
Cc: Law.Nicole@epamail.epa.gov; Tracy Walters
Subject: RE: EPA comment on Mojave 1117

Thank you – we very much appreciate your commenting this early in the process. We will address those comments in the public draft.

From: Steckel.Andrew@epamail.epa.gov [mailto:Steckel.Andrew@epamail.epa.gov]
Sent: Thursday, June 25, 2009 11:04 AM
To: Alan De Salvio; mguzzett@arb.ca.gov
Cc: Law.Nicole@epamail.epa.gov
Subject: EPA comment on Mojave 1117

United States Environmental Protection Agency

Region IX
75 Hawthorne Street
San Francisco, CA 94105-3901

June 25, 2009

Transmittal of EPA Rule Review Comments

To: Alan De Salvio, Mojave Desert Air Quality Management District
adesalvio@mdaqmd.ca.gov

Mike Guzzetta, California Air Resources Board
mguzzett@arb.ca.gov

From: Andrew Steckel, Rulemaking Office Chief
steckel.andrew@epa.gov

Re: Rule 1117 Graphic Arts and Paper, Film Foil and Fabric Coatings, Preliminary draft rule dated May 26, 2009

We are providing comments based on our preliminary review of the draft rule identified above. Unless otherwise indicated, paragraph numbers refer to the draft rule referenced above. Please direct any questions about our comments to me at (415) 947-4115 or to Nicole Law at (415) 947-4126.

1 → In Section C.11, we recommend the District incorporate work practice requirements for cleaning operations as described in the CTGs for Flexible Package Printing and Paper, Film, and Foil Coatings.

6/25/2009

2 → In Section E.2, we recommend the District keep the recordkeeping requirement on a daily basis.

3 → In Section E.2.a.i, we recommend the District reword this option to clarify the intended meaning. A suggested wording could be "...identify the maximum VOC content using the minimum density of 1,010 gm/liter (8.44 lb/gal)."

4 → In Section F, we recommend the District clarify that a violation determined by any listed test method shall constitute a violation of the rule.

6/25/2009

District response to Comment Letter 2

1. Section (C)(12) – Work Practices was added with the work practice requirements for cleaning operations as described in the CTGs.
2. Recordkeeping requirements in section (E)(2)(a), (b) and (c) were returned to “daily.”
3. Section (E)(2)(a)(i) was re-worded to clarify the intended meaning.
4. Section (F)(8) was added to clarify that a violation determined by any listed test method shall constitute a violation of the rule.

Comment Letter 3

June 26, 2009

TO: Alan DeSalvio, MDAQMD
FROM: Marci Kinter, SGIA
RE: Comments on Proposed Revisions to Rule 1117, Graphic Arts and Paper, Film, Foil and Fabric Coatings

The Specialty Graphic Imaging Association (SGIA), representing the interests of those facilities producing products via screen printing or digital imaging technologies and its associated supplier base, submits the following comments to Proposed Rule 1117, Graphic Arts and Paper, Film, Foil and Fabric Coatings. We thank you for the opportunity to comment on this important rulemaking. Our comments are arranged by section of the proposal for easy reference.

(A) General (2) Applicability

1 → We recommend that the following items be moved from Section D, Exemptions, to this section: (D)(1)(a); (D)(1)(b); (D)(1)(d); and (D)(1)(e). Providing this information under the applicability section provides clear guidance to those reading the rule as to which operations fall under this rule's jurisdiction. We concur with the District's decision to exempt both waterslide decals and digital printers and digital printing operations from the jurisdiction of this rule.

2 → For item (D)(1)(d), Digital Printers and Digital Printing Operations, we suggest that the following language be added regarding the required recordkeeping and monitoring requirements:

"The requirements of Section C of this Rule shall not apply to digital printers or digital printing operations, provided applicable records are maintained in accordance with the requirements of Section (E)(5)." *Derived from BAAQMD Rule 8-20 Section 8-20-120.*

By adding this language, all digital printing operations in the District understand the obligation for recordkeeping.

(C) Requirements

The requirements as set forth in (C)(4), Screen Printing Operations are appropriate and do correlate with the adoption of limits in other California Air Districts.

3 → To conform with other California Air Districts that have recently adopted solvent cleaning limits for Screen Printing as found Section (C)(8), Solvent Cleaning, we recommend that the effective date be set to July 2011, similar to the effective date established by the Bay Area Air Quality Management District in Rule 8, Regulation 20, Graphic Arts Printing and Coating Operations, adopted November 2008. Our main concern resides not with solvent cleaning products used for final screen reclamation activities, but with on-press cleaning for screen printing operations.

The use of on-press cleaners within the screen printing industry remains a critical step in the manufacturing process. The ability to quickly wipe off the screen during production with minimal production waste is both an economic necessity as well as environmental issue. SGIA has been working with the South Coast Air Quality Management District to test and identify on-press cleaners that would meet the 100 grams per liter limit. SGIA developed, in conjunction with the SCAQMD, the following critical performance criteria as the testing protocol:

- Odor – subjective rating but often critical to acceptance by the printer.
- Quantity needed to quickly penetrate and reopen the screen.
- Number of shop towels used.
- Number of make ready discards.
- Time needed to accomplish the task.
- Can tape adhere to the bottom of the screen?
- Any ink/stencil interference or degradation?
- Impact of the use of the press wash on the final removal process.

SGIA member companies undertook performance testing under a variety of screen conditions. These conditions are representative of the screen industry at large. Conditions included age of screen, ink color, ink coverage, image size, and ink type.

4 → The quantity of product with 100 grams of VOC per liter of material used increased on a per screen basis as the product was not able to quickly penetrate the mesh openings. . For the products tested, oily residues were left on the screen which resulted in more waste from dirty shop towels and make ready discards. In some instances, the residual solvent left on the screen mixed with the ink and produced poor quality prints.

The printing facility customers who tested the low VOC on-press cleaners agree that these cleaners work well for final reclamation activities, but not for on-press cleaning. We were able to identify on-press cleaners that performed well with a VOC content of 300 grams per liter.

We recommend that the District include, under Screen Printing, in Table 7, a line for on-press cleaning with a VOC content limit of 300 grams per liter. With this addition, all screen printing facilities will be able to comply with the solvent cleaning requirements.

To clarify the operations this line item applies to, we offer the following definition:

ON-PRESS SCREEN CLEANING is a solvent cleaning activity carried out during press runs in screen printing operation to remove excess inks and contaminants from a screen that is still attached to the press.

Conclusion
Thank you for the opportunity to comment on this very important rulemaking. The Specialty Graphic Imaging Association is committed to assist their members in reducing their environmental footprint, but in a manner that respects the technology used within the industry sector.

If you have any questions regarding our comments, please feel free to contact me directly at 703-359-1313 or by email at marcik@sgia.org.

Sincerely,

Marcia Y Kinter

Marcia Y. Kinter
Vice President – Government & Business Information

District response to Comment Letter 3

1. Subsections (D)(1)(c), (d) and (e) have been moved to section (D)(2) which is more appropriate and clear for those reading the rule. The District believes that (D)(1)(a) and (b) should remain as placed.
2. The District believes that the requirement of section (D)(2)(f) (digital printing operations) is appropriately located in the exemption section rather than the applicability section to remain consistent with typical rule format used in the District.
3. The effective date of solvent cleaning VOC limits in Table 7 has been changed to July 2011 for consistency with Bay Area Air Quality Management District rule requirement as requested.
4. The District does not feel that a separate VOC limit is necessary for Screen printing wipe cleaning as this method of clean-up is adequately addressed in section (C)(8)(b).

Comment Letter 4

Tracy Walters

From: Harry Pontius [HPontius@vvdailypress.com]
Sent: Monday, June 29, 2009 10:39 AM
To: Tracy Walters
Subject: Proposed Rule 1117

Hi Tracy,

Sorry for taking so long in responding to the proposed Rule 1117. With regards to the proposed new VOC lbs/gal levels, we will have no problem in meeting them for our inks and fountain solutions. What we will have a problem with is the new VOC lbs/gal level for our press wash. Our current press wash (Response 4400 / Wash V-253) has a voc level of 6.7 lbs/gal.
Our supplier has created a new press wash (California Wash) but that too has a voc level of 6.55 lbs/gal, which still does not meet the proposed new voc level of 0.83 lbs/gal. I'm afraid that if there is a press wash that does meet the new voc level it will not be able to clean a press adequately. I do a few calls into other California Newspapers to see what they are doing and as soon as I hear from them I will let you know. Thank you for your assistance and if you have any questions please do not hesitate to give me a call.

1 →

Thank You.
Harry C. Pontius
Director of Operations
760-951-6224 Office
760-964-9061 Cell

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District response to Comment Letter 4

1. Exemption (D)(6) has been added for cleaning materials with a VOC composite vapor pressure less than 8 mm Hg at 20 C which is consistent with the Industrial Solvent Cleaning CTG. This will allow the operator to comply with all the VOC requirements of the rule.

Comment Letter 5

Tracy Walters

From: cfjacobson@mmm.com
Sent: Thursday, July 09, 2009 2:44 PM
To: Tracy Walters
Subject: RE: questions on MDAQMD Rule 1117

Hi, Tracy --

Thank you again for the opportunity to comment on the MDAQMD's proposed Rule 1117. I apologize for taking so long to get back to you. Below please find a proposed definition for thin film UV inks that you can use for excluding these inks from the VOC content labeling requirements in
1 → (C)(11) and (E)(8). This definition comes from EPA Method 24 (
http://www.epa.gov/ttn/emc/promgate/m-24.pdf; see sections 11.1.5, 12.2, and 12.1).

(B)(between the current 100 and 101) "Thin film UV ink" - An ultraviolet ink for which <0.2 g will cover an area of >=225 cm2 (35 in2), using the following formula:

C = F x A x Dc

where

A = area of substrate in cm2 (or in2),
C = amount of ink added to the substrate in g, Dc = density of ink in g/cm2 (or g/in2), and F = manufacturer's recommended film thickness in cm (or in)

Please let me know if you have any further questions.

-- Catherine

Catherine F. Jacobson, Ph.D., DABT
3M Material EHS
3M Center, Building 0220-06-E-03
St. Paul, MN 55144
cfjacobson@mmm.com
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|"Tracy Walters" <twalters@mdaqmd.ca.gov>
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District response to Comment Letter 5

1. Definition (B)(101) – Thin Film UV Ink, has been added pursuant to EPA Method 24, 11.1.5, 12.1, and 12.2.

Comment Letter 6

July 20, 2009

To: Tracy Walters

From: Marci Kinter, SGIA

Re: Comments on Preliminary Draft 2, Rule 1117

Thank you again for the opportunity to comment on the second preliminary draft of Rule 1117. Based on the revised draft, I have a clarifying question and a recommendation for a language change.

1 → The clarifying question concerns Section (D), Exemptions. The applicability statement for this section indicates that the requirements of Rule 1117 do not apply to those operations listed in (D)(1), **except for the recordkeeping requirements of section (E)(6)** (emphasis added). We can understand the applicability of this requirement to those facilities listed in (D)(1)(a) and (D)(1)(b). However, we do not understand the applicability of this section to the facilities/products listed in (D)(1)(c); (D)(1)(d); and (D)(1)(e). It is our understanding that blanket repair materials, digital printers and digital printing operations and screen printing of waterside decals are exempt from the requirements contained in Rule 1117, regardless of VOC emissions per calendar month. This is the intent of the exemption as contained in Rule 4607 of the SJVUAPCD.

We would recommend that the aforementioned list be moved to section (D)(2). Based on our understanding of the rule exemption, specifically for the production of waterslide decals and digital printers and printing operations, these units would be exempt from the rule's requirements regardless of emission status. We do agree with the additional recordkeeping requirements imposed on digital printers and digital printing operations.

2 → The addition of (D)(6), exemption of cleaning materials used in Offset Lithography based on the 2006 CTG, raises an interesting question. The September 2006 CTG for Industrial Cleaning Solvents, contains a similar measure for the use of cleaning solvents for other types of manufacturing operations. We would request that the exemption be expanded to exempt all cleaning materials used with a vapor pressure of 10 mm Hg. This would align Rule 1117 with both CTGs.

Thank you again for the opportunity to comment. We look forward to working with you on this very important industry regulatory initiative. If you have any questions, please do not hesitate to contact me at 703-359-1313 or by email at marcik@sgia.org.

District response to Comment Letter 6

1. The District concurs with the clarification requested and these sections were relocated to (D)(2).
2. The District concurs that the exemption can be expanded to include all cleaning solvents with a vapor pressure of 8 mm Hg for consistency with the CTG for Industrial Cleaning Solvents.

Comment Letter 7

Tracy Walters

From: cfjacobson@mmm.com
Sent: Tuesday, July 28, 2009 6:26 AM
To: Tracy Walters
Subject: Re: Revisions to Rule 1117 - Graphic Arts

Attachments: MD1117 preliminary draft d2.pdf

MD1117 preliminary draft d2.pd...

Hi, Tracy --

Thank you for letting me have one last look at this proposal. We appreciate your exempting thin film UV inks from the labeling requirement in (C)(11) and removing the duplicative labeling requirement that was in (E)(8).

I have two or three changes for the thin film UV ink definition in (B)(101). Again, this definition comes from EPA Method 24 (http://www.epa.gov/ttn/emc/promgate/m-24.pdf; see sections 11.1.5, 12.2, and 12.1.

1 → First, the required area should be greater than or equal to 225 cm2. It appears that the proposal says greater than 225 cm2, though it could be that the underline that marks this as added text is covering up a line underneath the greater than symbol.

Second, A should be defined as the area (not amount) of substrate.

Third, the density should be in g/cm3 (or g/in3). I apologize for sending you "g/cm2 (or g/in2)." As I reread through the final proposal, I realized that density is weight per volume, not weight per area, and I confirmed with Method 24 that "cm" and "in" should be cubed (not squared).

If you have any questions, please let me know. Thank you again for your attention to our comments!

-- Catherine

Catherine F. Jacobson, Ph.D., DABT
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3M Center, Building 0220-06-E-03
St. Paul, MN 55144
cfjacobson@mmm.com
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| From: |
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|"Tracy Walters" <twalters@mdaqmd.ca.gov>
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|<marcik@sgia.org>, <law.nichole@epamail.epa.gov>, <cfjacobson@mmm.com>,
<HPontius@vvdailypress.com>

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|Revisions to Rule 1117 - Graphic Arts
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Good afternoon,

I have attached a second preliminary draft of Rule 1117- Graphic Arts and Paper, Film, Foil and Fabric Coatings for your review. This draft version has incorporated suggestions and comments received to date. Please let me know if your comments have been adequately addressed or require further discussion by July 31, 2009. If there are no further comments, we will release a public draft version and schedule amendment for September or October.

Thank you,

Tracy Walters
(760) 245-1661 x 6122
twalters@mdaqmd.ca.gov
(See attached file: MD1117 preliminary draft d2.pdf)

District response to Comment Letter 7

1. Typographical errors in definition (B)(101) were made as noted. The markup does obscure the equal portion of the greater than or equal to symbol.

Appendix "D"

California Environmental Quality Act
Documentation

1. Draft Notice of Exemption, San Bernardino County
2. Draft Notice of Exemption, Riverside County

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NOTICE OF EXEMPTION

TO: County Clerk
San Bernardino County
385 N. Arrowhead, 2nd Floor
San Bernardino, CA 92415

FROM: Mojave Desert
Air Quality Management District
14306 Park Ave
Victorville, CA 92392-2310

X MDAQMD Clerk of the Governing Board

PROJECT TITLE: Amendment of Rule 1117 – Graphic Arts and Paper, Film, Foil and Fabric Coatings

PROJECT LOCATION – SPECIFIC: San Bernardino County portion of the Mojave Desert Air Basin and Palo Verde Valley portion of Riverside County.

PROJECT LOCATION – COUNTY: San Bernardino and Riverside Counties

DESCRIPTION OF PROJECT: The proposed amendment of Rule 1117 – *Graphic Arts and Paper, Film, Foil and Fabric Operations* will satisfy the provisions of Health & Safety Code §39614(d) which requires the adoption of readily available, feasible and cost-effective control measures for Particulate Matter (PM) as well as to satisfy 42 U.S.C. §§7511a (Federal Clean Air Act (FCAA) §182) which requires that ozone non-attainment areas implement Reasonably Available Control Technology (RACT) for sources that are subject to Control Technique Guidelines (CTGs) and for major sources of ozone precursors.

NAME OF PUBLIC AGENCY APPROVING PROJECT: Mojave Desert AQMD

NAME OF PERSON OR AGENCY CARRYING OUT PROJECT: Mojave Desert AQMD

EXEMPT STATUS (CHECK ONE)

Ministerial (Pub. Res. Code §21080(b)(1); 14 Cal Code Reg. §15268)
Emergency Project (Pub. Res. Code §21080(b)(4); 14 Cal Code Reg. §15269(b))
X Categorical Exemption – Class 8 (14 Cal Code Reg. §15308)

REASONS WHY PROJECT IS EXEMPT: The proposed amendment of Rule 1117 is exempt from CEQA review because it will not create any adverse impacts on the environment. The proposed requirements in the proposed amendments to Rule 1117 are more stringent than the currently existing requirements (see more detailed discussion in Rule Summary §(D)) in that: rule applicability is expanded to include current CTG source categories; definitions are updated to make the rule more comprehensive, reflect the current applicability of the rule, and provide additional clarity; VOC limits for various categories of coatings and solvent coating operations have been included; Work practice requirements have been added; and, the monitoring and recordkeeping, and test method sections have been strengthened. Therefore, no adverse environmental effects are foreseen from the proposed amendments.

LEAD AGENCY CONTACT PERSON: Eldon Heaston **PHONE:** (760) 245-1661

SIGNATURE: _____ **TITLE:** Executive Director **DATE:** 09/28/2009

DATE RECEIVED FOR FILING:

NOTICE OF EXEMPTION

TO: Clerk/Recorder
Riverside County
3470 12th St.
Riverside, CA 92501

FROM: Mojave Desert
Air Quality Management District
14306 Park Ave
Victorville, CA 92392-2310

X MDAQMD Clerk of the Governing Board

PROJECT TITLE: Amendment of Rule 1117 – Graphic Arts and Paper, Film, Foil and Fabric Coatings

PROJECT LOCATION – SPECIFIC: San Bernardino County portion of the Mojave Desert Air Basin and Palo Verde Valley portion of Riverside County.

PROJECT LOCATION – COUNTY: San Bernardino and Riverside Counties

DESCRIPTION OF PROJECT: The proposed amendment of Rule 1117 – *Graphic Arts and Paper, Film, Foil and Fabric Operations* will satisfy the provisions of Health & Safety Code §39614(d) which requires the adoption of readily available, feasible and cost-effective control measures for Particulate Matter (PM) as well as to satisfy 42 U.S.C. §§7511a (Federal Clean Air Act (FCAA) §182) which requires that ozone non-attainment areas implement Reasonably Available Control Technology (RACT) for sources that are subject to Control Technique Guidelines (CTGs) and for major sources of ozone precursors.

NAME OF PUBLIC AGENCY APPROVING PROJECT: Mojave Desert AQMD

NAME OF PERSON OR AGENCY CARRYING OUT PROJECT: Mojave Desert AQMD

EXEMPT STATUS (CHECK ONE)

Ministerial (Pub. Res. Code §21080(b)(1); 14 Cal Code Reg. §15268)
Emergency Project (Pub. Res. Code §21080(b)(4); 14 Cal Code Reg. §15269(b))
X Categorical Exemption – Class 8 (14 Cal Code Reg. §15308)

REASONS WHY PROJECT IS EXEMPT: The proposed amendment of Rule 1117 is exempt from CEQA review because it will not create any adverse impacts on the environment. The proposed requirements in the proposed amendments to Rule 1117 are more stringent than the currently existing requirements (see more detailed discussion in Rule Summary §(D)) in that: rule applicability is expanded to include current CTG source categories; definitions are updated to make the rule more comprehensive, reflect the current applicability of the rule, and provide additional clarity; VOC limits for various categories of coatings and solvent coating operations have been included; Work practice requirements have been added; and, the monitoring and recordkeeping, and test method sections have been strengthened. Therefore, no adverse environmental effects are foreseen from the proposed amendments.

LEAD AGENCY CONTACT PERSON: Eldon Heaston **PHONE:** (760) 245-1661

SIGNATURE: _____ **TITLE:** Executive Director **DATE:** 09/28/2009

DATE RECEIVED FOR FILING:

Appendix "E"
Bibliography

The following documents were consulted in the preparation of this staff report.

Statutes and Regulations

EPA-450/2-76-028 (1976/11) – Control of Volatile Organic Emissions from Existing Stationary Sources – Volume I: Control Methods for Surface Coating Operations

EPA-450/2-77-008 (1977/05) – Control of Volatile Organic Emissions from Existing Stationary Sources – Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks

EPA-450/2-78-033 (1978/12) – Control of Volatile Organic Emissions from Existing Stationary Sources – Volume III: Graphic Arts-Rotogravure and Flexography

EPA-450/3-92-013 (1992/04) – Control of VOC Emissions from Ink and Paint Manufacturing Processes

EPA 453/R-06-002 2006/09 – Control Techniques Guidelines for Offset Lithographic Printing and Letterpress Printing

EPA 453/R-06-003 – Control Techniques Guidelines for Flexible Packaging Printing

EPA 453/R-07-003 – Control Techniques Guidelines for Paper, Film, and Foil Coatings

40 CFR 63 – National Emission Standards for Hazardous Air Pollutants; Paper and other Web Coating; Proposed Rule (September 13, 2000)

40 CFR 63 – National Emission Standards for Hazardous Air Pollutants; Printing, Coating, and Dyeing of Fabrics and other Textiles; Final Rule (May 29, 2003)

40 CFR 63 Subpart KK – National Emissions Standards for the Printing and Publishing Industry

40 CFR 63 Subpart QQ – Standards of Performance for the Graphic Arts Industry: Publication Rotogravure Printing

40 CFR 63 Subpart RR – Standards of Performance for Pressure Sensitive Tape and Label Surface Coating Operations

Local Air Districts

Regulation 8, Rule 20: Graphic Arts Printing and Coating Operations (Bay Area Air Quality Management District, amended November 19, 2008)

Staff Report for Proposed Amendments to Regulation 8, Rule 20: Graphic Arts Printing and Coating Operations (Bay Area Air Quality Management District, October 2008)

Rule 450 – Graphic Arts Operations (Sacramento Metropolitan Air Quality Management District, amended 10/23/2008)

Rule 4607 – Graphic Arts and Paper, Film, Foil and Fabric Coatings (San Joaquin Valley Air Pollution Control District, amended 12/18/2008)

Attachments for Agenda Item regarding Rule 4607 amendments (San Joaquin Valley Air Pollution Control District, 12/18/2008)

Rule 1130 – Graphic Arts (South Coast Air Quality Management District, March 6, 1992)

Rule 1130 – Graphic Arts (South Coast Air Quality Management District, October 8, 1999)

Attachments for Agenda Item Regarding Rule 1130 – Graphic Arts (South Coast Air Quality Management District, October 8, 1999)

SIP Citations

Rule 1130 (South Coast Air Quality Management District, for Blythe/Palo Verde Valley)
58 FR 50884, Limited approval/limited disapproval of 03/06/92 version
59 FR 17697, Finalizing Limited approval, limited disapproval of 03/06/92 version
60 FR 55312/55314/55354, Approval of Rule 1130

Rule 1130.1 (South Coast Air Quality Management District, for Blythe/Palo Verde Valley)
61 FR 43976, Withdrawal

Rule 1117 (Mojave Desert Air Quality Management District)
61 FR 18962

Miscellaneous

EPA Method 24 – Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings.